

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR 2019

HEARINGS BEFORE A SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES ONE HUNDRED FIFTEENTH CONGRESS SECOND SESSION

SUBCOMMITTEE ON DEFENSE

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NOTE: Under committee rules, Mr. Frelinghuysen, as chairman of the full committee, and Mrs. Lowey, as ranking minority member of the full committee, are authorized to sit as members of all subcommittees.

JENNIFER MILLER, WALTER HEARNE, BROOKE BOYER, BG WRIGHT,
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HAYDEN MILBERG, and SHERRY L. YOUNG
Subcommittee Staff

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DEPARTMENT OF DEFENSE APPROPRIATIONS FOR 2019

WEDNESDAY, MARCH 7, 2018.

FISCAL YEAR 2019 UNITED STATES NAVY AND MARINE CORPS BUDGET OVERVIEW

WITNESSES

**RICHARD V. SPENCER, SECRETARY OF THE NAVY
ADMIRAL JOHN M. RICHARDSON, CHIEF OF NAVAL OPERATIONS
GENERAL ROBERT B. NELLER, COMMANDANT OF THE MARINE CORPS**

OPENING STATEMENT OF CHAIRMAN GRANGER

Ms. GRANGER. The subcommittee will come to order.

This morning, the subcommittee will begin a series of open defense posture and budget hearings with our military services. Today, we will hear from the Navy and Marine Corps leadership. Although we are still completing work on the fiscal year 2018 bills, we must also begin the fiscal year 2019 budget process. The schedule will be very tight.

I want to thank the Navy and Marine Corps leaders for being here today to provide the subcommittee with their honest assessments of the readiness of our Navy and Marine Corps and the path forward, as we begin our work of carefully—

Mr. WOMACK. Madam Chairwoman, the sound system is not working.

Ms. GRANGER. I have said nothing that you haven't heard before.

So we will get to work carefully reviewing the administration's defense budget request.

Before I introduce our witnesses, I would like to recognize our ranking member, Mr. Visclosky, for any remarks he would like to make.

OPENING REMARKS OF MR. VISCLOSESKY

Mr. VISCLOSESKY. Madam Chair, I appreciate the hearing being held.

And thank you all for your service.

Ms. GRANGER. Allow me to introduce our briefers: the Honorable Richard Spencer, Secretary of the Navy; Admiral John Richardson, Chief of Naval Operations; and General Neller, Commandant of the Marine Corps.

Secretary Spencer is making his first official appearance before the entire subcommittee.

Beginning with Secretary Spencer, I would like to ask that each of you take approximately 5 minutes to set the stage with some opening remarks.

SUMMARY STATEMENT OF SECRETARY SPENCER

Mr. SPENCER. It was on just a second ago. I will use my command authority voice.

Chairwoman Granger, Ranking Member Visclosky, distinguished members of the committee, thank you for the time that we come before you here and talk about the status of the Department of the Navy.

It is an honor to sit here with the Navy-Marine Corps team in front of you, the CNO and the Commandant, two men whom I respect and support. And I have found that in the short time that we have worked together, 7 months so far, so we have rapidly joined together as an effective, seamless management team.

First, on behalf of the sailors and Marines, I would like to express gratitude for the efforts put forth by you and the Congress in addressing the President's budget request. We are very much aware that this process has stretched Members to limits on many fronts. Please know that the resources that we will receive will be expended in focused alignment with the National Defense Strategy building our combat-credible force.

Today, 94,000 sailors and Marines are forward deployed and stationed, using the global maritime commons as a medium of maneuver, ensuring the maritime lanes of commerce remain free and open, ensuring access to overseas regions, defending key interests in those areas, protecting U.S. citizens abroad, and preventing adversaries from leveraging the world's oceans against the United States.

For almost 30 years, we have enjoyed a well-earned, uncontested global dominance. Those days are over. Your Navy-Marine Corps team remains very capable; however, our competitive advantage is being challenged. That said, our budget request enhances readiness and continues to increase the capability and capacity of the Navy-Marine Corps team.

As directed within the 2018 National Defense Strategy, our budget submission supports building a more lethal, resilient, and agile force to deter and defeat aggression by peer competitors and other adversaries in all domains across the conflict spectrum.

My priorities for the Department center on three categories: people, capabilities, and process. The ability to accomplish our mission relies on people: 800,000 sailors, Marines, Active Duty, citizen soldiers, and civilian teammates and families. The ability to accomplish our mission relies on having the capabilities necessary to fight tonight, challenge competitors, and deter rivals. Lastly, the ability to accomplish our mission relies on having efficient processes that will speed value and support to our warfighters.

The Department is committed to follow reform guidelines and has identified savings already of more than \$1 billion in fiscal year 2019 and \$5 billion over the Future Year Defense Program, which will all be reinvested in force structure and readiness.

I deliver you today a plan with a sense of urgency. We cannot and will not allow our competitive advantage to erode. With your

guidance, these planned investments will provide combat-credible maritime forces now and in the future. We will ensure that we are exceptional stewards of the resources that you provide. We will drive efficiency across the Department to maximize every dollar and invest smartly to leverage the return on our investments.

I look forward to your questions.

[The written statement of Secretary Spencer follows:]

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THE HOUSE COMMITTEE
ON APPROPRIATIONS

STATEMENT OF
THE HONORABLE RICHARD V. SPENCER
SECRETARY OF THE NAVY

BEFORE THE
HOUSE SUBCOMMITTEE ON DEFENSE
COMMITTEE ON APPROPRIATIONS

ON
FISCAL YEAR 2019 DEPARTMENT OF THE NAVY BUDGET
7 MARCH 2018

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INTRODUCTION

Chairwoman Granger, Ranking Member Visclosky, distinguished members of the Committee, thank you for the opportunity to appear before you today to testify regarding the Department of the Navy (DON) 2019 President's Budget request (PB19).

First, on behalf of our Sailors and Marines, I would like to express gratitude for the efforts put forth by Congress addressing the President's Budget request. We are very aware that this process has stretched members to their limits on many fronts. Please know that the resources we receive will be expended in focused alignment with the National Security Strategy (NSS) and National Defense Strategy (NDS) building our combat credible force.

Our Nation supports maritime operations worldwide. Forward-deployed and forward-stationed naval forces use the global maritime commons as a medium of maneuver, ensuring the maritime levels of commerce remain free and open, assuring access to overseas regions, defending key interests in those areas, protecting U.S. citizens abroad, and preventing adversaries from leveraging the world's oceans against the United States. The ability to sustain operations in international waters far from U.S. shores constitutes a distinct advantage for the United States – a Western Hemisphere nation separated from many of its strategic interests by vast oceans. Maintaining this advantage in an interconnected global community that depends on the oceans remains an imperative for the Sea Services and the Nation.

Our PB19 request enhances readiness and begins increasing the capability and capacity of the Navy and Marine Corps team. As directed within the 2018 National Defense Strategy (NDS), the PB19 budget submission will support the building of a more lethal, resilient, and agile force to deter and defeat aggression by peer competitors and other adversaries in all domains and across the conflict spectrum. Ultimately, our budget submission reflects the DON's efforts to protect the homeland and preserve America's strategic influence around the world. The Navy's overarching plan – the Navy the Nation Needs (NNN) – consists of six dimensions: Readiness, Capability, Capacity, Manning, Networks, and Agility. The Marine Corps' plan – Modernizing for the Future Force – focuses on investments in Modernization, Readiness, and Manpower; further increasing its competitive advantage and lethality resulting in a Next Generation Marine Corps. The resourcing of both services aligns with the NDS, ready to fight and win across the range of military operations (ROMO).

The strategic environment is rapidly changing and the Navy and Marine Corps is engaged in a competition that they have not faced in over twenty years. To meet the objectives of the NDS, and as part of the Joint Force, the Navy and Marine Corps' primary force contributors are Carrier Strike Groups (CSG) and Amphibious Ready Groups / Marine Expeditionary Units (ARG/MEU), and ballistic missile submarines – the most survivable leg of the nuclear triad. These units remain forward at all times, while additional CSGs and ARG/MEUs are ready to surge in support of Operational Plans. Our PB19 budget continues to make strides in achieving that requirement to once again re-establish the standard that has ensured preeminence. This will be imperative to winning peer-on-peer competition, as we move forward to deliver enhanced distributed lethality.

The Department is committed to follow reform guidance and has identified savings of over \$1 billion in FY2019 and \$5 billion over the Future Years Defense Program (FYDP) which will be reinvested in force structure and readiness. Savings were achieved through reform efforts focused on improving organizational effectiveness; eliminating, restructuring, or merging activities; and workforce management. One specific fiscal reform effort has been the Department's focus on improving the expenditure of funds through an emphasis on the quality of our obligations. Leadership is committed to ensure that a dollar appropriated to the Department is expended by the Department to achieve the direction laid out by the NDS. Additionally, the Department has also reviewed duplicative programs or programs that are no longer mission essential. This has resulted in the divestiture of legacy F/A-18

Hornets, the transition of the HH-60H reserve squadron from legacy aircraft to newer MH-60S aircraft, and a review of Marine Corps training munitions. Representative investments resulting from the reform initiative include an additional DDG-51, one additional F/A-18 E/F, increased procurement of Rolling Air Frame missiles and MK48 torpedoes, and funding afloat readiness to maximum executable levels. Moreover, the Department is focused on improving business processes heightened through the audit of our financial statements.

As we continue to look forward to the PB19 budget, our priorities center on *people, capabilities, and processes*, and will be achieved by our focus on speed, value, results, and partnerships. Readiness, lethality, and modernization are the requirements driving these priorities.

PEOPLE

The ability to accomplish our mission successfully relies on the Navy and Marine Corps team – 800,000 Sailors and Marines, active duty and reserve, our civilian teammates and families. We rely on their superior talent, recruiting the most promising workforce for the future, and making strategic investments in training and retention initiatives.

Our forward-deployed forces suffered tragic mishaps in 2017, both on the sea and in the air. We will never forget those we lost and we stand by our fellow Sailors and Marines along with their families in solidarity.

We do not take these losses lightly; both the Comprehensive and Strategic Readiness Reviews have examined the factors that led to the series of incidents on the sea and provided recommendations we are now implementing. The Strategic Readiness Review found that institutional deficiencies were the cumulative result of well-intended decisions developed over decades. Accepting deviations from our standards translated into the acceptance of higher risk, which then gradually became normalized, thereby compounding the accumulating risks. The entire Department of Navy leadership is committed to addressing these issues across the Force. The action plan, well underway, commands my full support and oversight and while we operate with a sense of urgency, we are steadfast in ensuring this is addressed correctly the first time.

Good order and discipline are key ingredients to unit cohesion and lethality. Sexual assault is a cancer effecting the aforementioned. The Department of the Navy has come a long way in addressing sexual assault, but until we get to zero, there is still work to be done. As with any cultural change in an organization, our challenge involves sustaining positive momentum. We continue to resource and monitor our progress and address preventing sexual assault along with prosecution. My commitment is enduring and fundamental, and my position of intolerance for sexual assault anywhere is unequivocal.

While the Navy and Marine Corps are achieving overall military recruiting objectives, the Department faces ongoing challenges from an increasingly competitive marketplace and a decline in the propensity for military service among young people as our accession goals are modestly increasing. The Department continues to explore systematic improvements to support recruitment and retention, to include programs which maintain the health and resilience of the force, and maximize professional, personal, and family readiness. Our success in sustaining maritime dominance relies on our ability to attract America's best. We will continue to recruit superior talent and invest in long-term measures to retain it, while fostering an environment where our Sailors, Marines, and civilians are provided the opportunities and resources they need to thrive and be successful. Aligned with our Core Values of Honor, Courage, and Commitment, we continue to strengthen our investment in the ethical development of our Sailors, Marines, and civilian employees. While competition for talent with the private sector continues to increase, I believe we are resourced and positioned to overcome our manning and retention challenges.

CAPABILITIES

As we build our lethal capabilities to fight tonight and challenge rivals, we must respond on all fronts, to include research and development, rapid prototyping, accelerated learning, and partnership with industry. These efforts and partnerships will be built on shared risks and shared benefits. We are now working with industry in a true partnership to achieve a sustainable acquisition process that will provide us solutions to problems we face in order to remain ahead of the competition.

The Department of the Navy has an overarching plan to meet warfighting requirements in support of the NDS. For example, the long range ship acquisition plan:

- (1) Establishes acquisition profiles to grow the force at a steady, sustainable rate. This includes sustainment of the industrial base at a level that supports more affordable acquisition while growing an experienced workforce to support more aggressive growth if additional resources become available.
- (2) Implements Service Life Extensions (SLE) based upon return on investment – we will modernize rather than replace when appropriate as good stewards of taxpayer dollars.
- (3) Provides options for aggressive growth as resources and industrial capacity permit. PB19 includes four additional DDG 51 Flight IIIs over the FYDP, for a total of 14 Flight III ships and three additional fleet oilers across the FYDP. New ship construction totals have increased since last year's plan, with three additional ships (1 DDG 51 Flight III, 1 Expeditionary Sea Base, and 1 fleet oiler) added in this request for FY19. Throughout the FYDP, the Department added a net total of 11 battle force ships.

With sustained funding and SLEs, PB19 puts the Navy on a path to 355 ships while we are simultaneously increasing our capabilities. By setting the conditions for an enduring industrial base as one of our priorities, the Navy is postured to take advantage of additional funding that may be provided through reform initiatives in future years. This can be achieved without threatening the long-term competitive posture of a balanced warfighting investment plan while retaining an option to accelerate a targeted portfolio of weapons systems.

The Navy is aggressively pursuing cost reduction opportunities to deliver fully capable assets at the most efficient possible cost. The Ford Class Aircraft Carrier program refined the ship construction process for CVN 79 by, capitalizing on technological improvements, and enhancing shipbuilder facilities to drive towards the targeted 18 percent reduction in labor hours from CVN 78. The Navy is also executing advance procurement and negotiating long-lead time material for CVN 80, and full funding for CVN 81 begins in FY23.

Naval Aviation continues to operate forward, fully prepared for conflict across the ROMO while managing near-term service life extensions, mid-term procurement and modernization, and long-term investment in research and development. With the support of Congress, the U.S. Navy and Marine Corps are implementing our "Vision for Naval Aviation 2020." The Department has initiated a Next Generation Air Dominance Analysis of Alternatives (AoA) study that is investigating technology and program investment requirements to recapitalize Navy F/A-18E/F and EA-18G tactical aviation platforms. The future of DON tactical aircraft relies on a combination of F-35B and F-35C 5th generation aircraft. Continued investment in capability upgrades for both platforms is required to improve the lethality of the CSG and ARG/MEU. We will see our first operational deployment of F-35Bs later this year with our ARG/MEUs in the Pacific.

The MV-22B Osprey's unique combination of vertical flight and fixed-wing capabilities continues to enable effective execution of missions that were previously unachievable. Marine Corps MV-22B's

continue to extend operational reach, revolutionizing our ability to operate from the sea, austere locations, and previously damaged airfields within a contested environment. The DON begins procurement of the Navy CMV-22B variant in support of the Carrier On-Board Delivery mission in FY18.

Navy and Marine Corps Expeditionary Forces will soon receive the next generation protected mobility. The Joint Light Tactical Vehicle begins fielding in 2019. In FY19, the Marine Corps is set to receive the first Amphibious Combat Vehicle Low Rate Initial Production units in preparation for Operational Test and Initial Operational Capability in 2020. These capabilities are vital for our continued efforts to adapt and modernize our expeditionary forces with the requisite protected mobility. As we work through the programmatic schedule with these vehicles, we are continually looking at ways to improve their ability to counter ever changing threats from potential engagement with peer adversaries.

The Department of the Navy is determined to lead the way in the development and responsible integration of cyber metrics and artificial intelligence, establishing aggressive goals for the acceleration of integrating these unmanned systems. One of these future systems is the Snakehead Large Displacement Unmanned Underwater Vehicle which is designated as a Maritime Accelerated Capability Office program to fast-track this capability. Surface operations will be augmented through an integrated team of manned and unmanned enhancing capabilities and capacity. Investments in autonomous platforms and mine countermeasure technology will reduce the threat of mines in contested waters while reducing risk to our Sailors conducting this dangerous mission.

Steady progress will continue in developing and fielding unmanned aviation assets. Today the MQ-4C Triton Unmanned Aircraft System enhances awareness of the operational environment and shortens the sensor-to-shooter kill chain. The Navy is committed to future unmanned carrier aviation with the MQ-25 Carrier Based Unmanned Aerial System that will deliver an unmanned tanker. The Marine Corps continues development of the unique Marine Unmanned Expeditionary (MUX) system to further increase lethality and resilience of the fleet while also enhancing aggregate ISR capability.

We are also investing in strike weapons as well as theater and high value target multi-layer area defense weapons for the Fleet. Investments are enhancing warfighting capability and increasing magazine depth. Along these lines, the Marine Corps is pursuing ground based fires to restrict freedom of movement along sea lanes while requesting the integration of Vertical Launch Systems to amphibious shipping.

Efficiently operating Navy and Marine Corps installations are essential in generating naval forces. Over the last decade the DON has taken risk by underfunding infrastructure capital investments and installation operations to fund other warfighting, readiness, and modernization requirements. Under-investment has created a backlog of maintenance and repair requirements and reduced facility effectiveness. The DON's FY19 budget request acknowledges and begins to address these installation investment challenges. The budget funds infrastructure that supports new platforms and an increase in infrastructure sustainment funding; begins to address the significant requirement to recapitalize our naval shipyards; and recapitalizes critical enabling infrastructure.

PROCESSES

The Department is actively reforming business processes and driving efficiencies to increase speed, value, and support to the warfighter, while concurrently enhancing lethality and increasing readiness. We are identifying and clearing constraints caused by burdensome policies and regulations, and are increasing adoption of agile business models and technologies to support our need for urgency. Layers of overhead are being removed and organizations are being flattened to return decision-making authority further down the command structure. We are also demonstrating progress in the area of data-driven decision making and problem solving. The Department of the Navy's FY19 budget request reflects extensive use of modeled campaign and mission level outcomes to evaluate capabilities and force structure and maximize

naval power. We stood up a Digital Warfare Office to harness the power of data by executing digital pilot projects that informed decisions on operational effectiveness and readiness. Moving forward, the FY20 Navy budget features additional force level analytic tools, developed at our Federally Funded Research and Development Centers and in conjunction with industry that will further assist us in integrating valuation and capability assessments to optimize the Navy's budget for the highest warfighting return on investment.

Growing the Fleet requires a strong and integrated relationship with our private sector partners. We are working closely with our prime contractors to ensure suppliers are prepared to support the increasing demand of building a larger Fleet. We need industry to provide solutions and capabilities at the speed of relevance and at an affordable value. As the same time we also need to be a better customer. Industry needs predictable and stable programs, which require a stable budget. If we are effective at long-range planning, we can increase our buying power by using all of our tools to provide stable commitments to our industrial partners. We appreciate the much needed two year budget deal and look forward to working with you to produce stable and flexible funding that will drive improved productivity, efficiency, and competitiveness across the supplier base.

We continue to pursue acquisition reforms contained in recent legislation, with emphasis on provisions that increase Service acquisition oversight and the role of the Service Chiefs in the process, along with those that provide opportunities to accelerate the fielding of critical capabilities. We are employing new constructs, to include the Maritime Accelerated Capabilities, the Marine Corps Rapid Capability Office, and an Accelerated Acquisition Board of Directors. These solutions will improve innovation, speed, and agility through strategy-driven investments addressing our highest priorities.

The DON is undergoing its first full audit of all financial statements, which will help us gain a clearer picture of the effectiveness and an opportunity to improve our processes and internal controls. The Marine Corps was the first from our Department to complete the Full Financial Statement Audit for FY 2017, sharing lessons learned across the Department. As our data quality improves, we will be able to harvest savings generated through process reform and reinvest in lethality. We are committed to full accountability for every dollar.

CONCLUSION

I deliver you today a plan with a sense of urgency. The FY19 President's Budget request seeks to provide sustained and predictable investments to modernize and increase the readiness of our Navy and Marine Corps team. We cannot and will not allow our competitive advantage to erode.

These planned investments will provide combat-credible maritime forces for the future. I commit to you that we will not just look forward but will lean forward. I will focus the Departments support to the NSS and NDS. We will gain efficiencies and effectiveness through business reforms at my level while supporting both the Chief of Naval Operations and the Commandant of the Marine Corps' programmatic efforts to fulfil their needs to meet the challenges our Nation faces in the evolving strategic environment and maritime domain. We are grateful to Congress for their support and efforts. We will ensure we are good stewards of the provided resources, drive efficiency across the department to maximize every dollar, and invest smartly to leverage the return on our investments.

I appreciate this opportunity to present our plan and will continue to work with the Congress to provide our Nation the Navy and Marine Corps team it requires.

Ms. GRANGER. Thank you very much.
Admiral Richardson.

SUMMARY STATEMENT OF ADMIRAL RICHARDSON

Admiral RICHARDSON. Congresswoman Granger, Ranking Member Visclosky, and distinguished members of the committee, thank you very much for the opportunity to testify today.

And I just want to echo the Secretary's remarks concerning how grateful we are for the tough work to get us to these funding levels. I know that that was hard work, and we do pledge to spend those funds responsibly and transparently.

I am also, as the Secretary said, very pleased to be here with Secretary Spencer and General Neller, two great leaders with whom I am working to increase warfighting lethality of our Navy-Marine Corps team. And make no mistake: A strong Navy-Marine Corps team matters to America's security and economic prosperity now more than ever.

This hearing comes at a critical time in our Nation's history. Thanks to decades of bipartisan congressional support, America's Navy still holds the title of best in the world. But our recent years of combat and fiscal uncertainty have eroded our warfighting advantage. And as our National Defense Strategy makes clear, we are now in an era of great-power competition. With a rising China and a resurgent Russia, America no longer enjoys a monopoly on seapower or sea control. And, meanwhile, rogue regimes like North Korea and Iran threaten global stability.

Given these challenges, it is absolutely critical that we increase American naval power with a sense of urgency. In order to win in this competitive environment, we must take a balanced approach to build the Navy the Nation needs. This Navy requires a bigger fleet, more ships, submarines, aircraft, and special operations forces.

Congress agreed with the conclusions of several thoughtful studies, and a 355-ship Navy is now the law of the land. This will increase our Navy's ability to protect our homeland and our allies, to expand our influence as America's global maneuvering force, and to support American prosperity by safeguarding access to critical waterways.

And while there will always be a debate about the final number of ships to build, and that will fluctuate with the security environment in any given year, we can all agree on one thing: The Navy must get bigger, and the demand signal is to start building now.

The Navy the Nation needs requires also a better fleet—more capability achieved through modernization, networking, agile operating concepts, and a talented force of sailors and civilians, with officers of competence and character to lead them.

And, finally, the Nation requires a ready fleet—more at-sea time, more flying, more maintenance, and more weapons of increased lethality that go faster, farther, and are more survivable.

As we discuss the 2019 budget request today, it is important to stress our Navy's commitment to good stewardship for every precious taxpayer dollar. Under the Secretary's leadership, we are determined to better understand the business of our business, to include embracing full participation in the Department-wide audit, so

we can look every American in the eye and tell them with confidence that their hard-earned money is being spent as carefully as if it were our own.

I am very grateful to this committee and the Congress for recent budgetary actions that put us on a strong trajectory to increasing American naval power.

The stakes are high, and there is more work to do. War at sea is unforgiving. The winners sail away, and the losers sink to the bottom of the ocean. In this complex and dynamic maritime environment, eager contenders are training to defeat us. So I give you my word that we will work every day to earn the title of the world's best Navy.

I look forward to sailing alongside Congress to build the Navy the Nation needs—a lethal Navy for our enemies in combat, a committed Navy for our allies and partners, and a safe Navy for our sailors.

Thank you, and I look forward to your questions.

[The written statement of Admiral Richardson follows:]

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STATEMENT
OF
ADMIRAL JOHN M. RICHARDSON
CHIEF OF NAVAL OPERATIONS

BEFORE THE
HOUSE SUBCOMMITTEE ON DEFENSE
COMMITTEE ON APPROPRIATIONS

ON
FISCAL YEAR 2019 NAVY BUDGET

7 MARCH 2018

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Chairwoman Granger, Ranking Member Visclosky, and distinguished members of the committee, thank you for the opportunity to testify today on the Navy's Fiscal Year 2019 budget.

This hearing comes at a critical time in our Navy's and our nation's history as we confront a dynamic security environment. The maritime domain -- which I define as the sea floor to the stars -- is indisputably more complex than it was when I took my oath in 1978. Within the past quarter century, global waterways have become more congested, with maritime traffic increasing by a factor of four. On the seabed, transoceanic cables carry 99% of all information, and new technologies are making undersea resources more accessible. The polar ice caps are receding, opening new trade routes, exposing new resources, and redrawing continental maps. People are migrating to megacities dotting the coastlines. Rapid technological advancements in cyberspace, artificial intelligence, robotics, and directed energy are changing the face of naval warfare. There can be no doubt that stability and economic prosperity both here in the United States and around the world are inherently linked to freedom of movement and security on, below, and above the world's oceans.

But just as we have come to depend on this rules-based security order, there are those who would seek to turn the tide and upend it. For the first time since the fall of the Soviet Union, we are experiencing a return to great power competition. With a rising China and a resurgent Russia, the U.S. does not enjoy a monopoly on sea power or sea control. Rogue regimes like North Korea and Iran persist in taking actions that threaten regional and global stability. Given these challenges, a balanced strategic approach is more important than ever.

Our priorities have been clearly defined by the President's *National Security Strategy*, which directs our Navy to protect the American homeland, promote American economic prosperity, and advance American influence throughout the world. The *National Defense Strategy* (*NDS*) operationalizes these imperatives and articulates our plan to compete, deter and win in the new competitive security environment of our time.

The maritime expression of the *NDS* -- what we are calling Navy the Nation Needs -- articulates the Navy's role as part of the broader military joint force across three lines of effort. First, we must restore readiness while building a more lethal joint force -- the prime objective of the Navy's FY-19 budget submission. Next, we must strengthen traditional alliances while building new partnerships to expand American influence and fortify global resolve. And finally, we must reform the Department to achieve greater performance through agile acquisition processes, early engagement with industry, capability iterations that ride the technological curve, and thoughtful stewardship of America's tax dollars.

As the *NDS* makes clear, unstable funding over the past decade has contributed to "erosion of military advantage," and recent action by Congress to restore stable and predictable funding demonstrates that you share this viewpoint. The recent passage of the Bipartisan Budget Act of 2018 (BBA-18), combined with the Request for Additional Appropriations (RAA), are major steps in the right direction, underscoring our shared responsibility to provide, maintain, and operate a global Navy. The importance of stable and predictable funding cannot be overstated. It facilitates more planning time, productivity, and purchasing

power; restores readiness through planned and precise resource allocation; sharpens perishable warfighting skills by steaming ships and flying planes; stabilizes the industrial base -- especially shipbuilding -- so that it is efficient, agile, postured to respond; enables us to mature technologies on a thoughtful path; and allows us to maximize every taxpayer dollar spent.

In FY-17 we arrested readiness decline with the Request for Additional Appropriations, and the FY-18 and FY-19 budget requests further restore readiness while beginning to increase warfighting capacity and capability. The FY-19 budget submission is strategy-based, seeking an \$11.3 billion increase for the Navy over PB-18. The single most effective way to maintain the strategic momentum started in FY-17 is to enact the FY-19 President's Budget by the start of the fiscal year. This funding will help us fulfill our responsibilities in the *NDS* by building the Navy the Nation Needs. Everything we do must contribute to increasing America's naval power, which must be balanced in **six specific dimensions** to achieve needed wholeness.

To increase America's naval power, we'll build a **bigger fleet** -- more platforms like ships, submarines, aircraft, and more special operations forces. Congress made a 355-ship Navy the law of the land, and this increased capacity will strengthen our ability to prevail in any warfighting contingencies, meet demand signals from Combatant Commanders, expand global influence, and support American prosperity by safeguarding access to critical markets, waterways, and chokepoints. In FY-19, this budget requests an additional \$7 billion in procurement accounts, funds a 299-ship deployable battle force, procures 10 new ships and submarines, and buys 120 fixed and rotary wing, manned and unmanned aircraft for the Navy and Marine Corps. Expanded across the Future Years Defense Program (FYDP), PB-19 funds construction of 54 battle force ships -- 11 more than the PB-18 baseline -- and extends the service life of six guided missile cruisers, four mine countermeasure ships, and one attack submarine to further increase the size of the fleet. And just as they have every day since the early 1960s, our ballistic missile submarines continue to patrol the deep as the only survivable leg of our nuclear triad. PB-19 includes \$3 billion in ship construction (SCN) funds to ensure lead *COLUMBIA*-class ship construction commences on time in FY-21, guaranteeing defense of the homeland into the 2080s. Additionally, our *Annual Long Range Plan for Construction of Naval Vessels*, which accompanies the budget request, outlines a path to reach the Navy the Nation Needs. While there will always be debate about the final number of ships for our Navy, we can all agree on one thing. The Navy must get bigger, and we must start building NOW.

To increase America's naval power, we'll build a **better fleet** -- more capability across all our naval platforms. This means fielding state-of-the-art systems and continually modernizing legacy ones. Keeping pace with advances in technology demands consistent, unwavering, and aligned financial, programmatic, and operational commitments. To that end, the FY-19 budget includes an increase of \$800 million for research and development in addition to other modernization efforts. For example, PB-19 includes \$276 million for guided missile cruiser modernization and \$79 million to upgrade eight cruisers to AEGIS Baseline 9, enabling them to perform critical Integrated Air and Missile Defense (IAMD) and Ballistic Missile Defense (BMD) operations simultaneously. By the end of FY19, the Navy will have 41 ships modified

for BMD missions to defend our ships and the homeland. PB-19 also invests over \$2 billion per year over the FYDP in land- and carrier-based aviation modernization and training to include improved radars, common avionics, structural enhancements, sensor upgrades, and refreshed mission computers. The budget maintains PB-18 funding levels for acoustic superiority modernization to improve large vertical arrays, advanced hull coating, and ship machinery quieting technology. The budget also requests \$420 million for Surface Electronic Warfare Improvement Program (SEWIP), which will enhance shipboard electronic support capabilities and continue delivery of Block 2 systems currently in full rate production. We are also leveraging accelerated acquisition and rapid prototyping -- for directed energy, lasers, STANDARD Missile (SM)-2/6 weapons, MQ-25 Stingray, and Unmanned Underwater Vehicle capabilities, just to name a few -- to deliver capability faster.

To increase America's naval power, we'll build a **networked fleet** -- allowing our fleet and the broader joint force to connect and combine in rapidly adaptable ways. History is replete with examples where networked forces that shared information executed more efficiently and effectively. The FY-19 budget builds on the progress made in FY-18 by requesting an additional \$420 million investment in command, control, communications, computers; intelligence, surveillance, and reconnaissance; and cyber resiliency. By establishing and requesting \$27 million to fund the Digital Warfare Office under the Deputy Chief of Naval Operations for Information Dominance (N2/N6), we continue to centralize our efforts to identify material and non-material solutions to mitigate warfighting gaps. Finally, critical upgrades to our E-2D Hawkeyes, F/A-18 EF Super Hornets, and EA-18G Growlers will improve Naval Integrated Fire Control-Counter Air (NIFC-CA) architecture and introduce sensor netting and Cooperative Engagement Mode, allowing air- and seaborne units to optimize sensing, tracking, shooting, and controlling functions.

To increase America's naval power, we'll build an **agile fleet** -- more innovative concepts of operating to increase our competitive advantage. This past year alone, we leveraged the global maneuver power that is inherent in our Navy through concepts like Distributed Maritime Operations, in which fleet commanders are able to distribute but still maneuver forces across an entire theater of operations as an integrated weapon system, leveraging multi-domain capabilities and harnessing the power of the fleet tactical grid; Third Fleet Forward, during which our San Diego-based numbered fleet commander retained command and control for forces operating west of the International Date Line; and electromagnetic spectrum management, which safeguards our units and preserves our capabilities. Over the past year, we also established the Navy Analytic Office to better integrate the results of wargames, fleet exercises, and experimentation and continually learn and improve our technical and tactical operations at sea. And we are focusing four global wargames -- facilitated through the Naval War College but sponsored by the Commanders of the Pacific Fleet and Naval Forces Europe -- on peer competitors and high-end warfare.

To increase America's naval power we'll build a **talented fleet** -- more recruiting, training, education and retention. America's sons and daughters have always been our greatest source of strength. But make no mistake, we're in a competition for talent. So the FY-19 budget requests an additional \$1.5 billion for military personnel, which will increase the size of the active force by 7,500 billets, thus providing more accessions and support personnel to

meet projected shipbuilding and special operations forces growth. Additionally, our Sailor 2025 initiative seeks to maximize all authorities and non-monetary incentives to attract and retain skilled teammates in all warfare disciplines. We are transforming Manpower, Personnel, Training, and Education by investing in user-friendly systems and by updating our personnel detailing and assignment processes. Finally, while we remain on track for mandatory headquarters reductions, the FY-19 budget adds nearly 3,200 critical civilian billets for ship depot maintenance, base security, intelligence, contracting, and training.

To increase America's naval power, we'll build a **ready fleet** -- more at-sea time, more flying, more ammunition and parts, more maintenance. Readiness -- both materiel and practice time --transforms our Navy from potential power to actual power. The FY-19 budget continues the readiness and wholeness commitments we made in the previous two requests by funding ship operations to 100% of the requirement and ship depot maintenance to 100% of executable capacity. It also funds flying hours to the maximum executable requirement and increases aviation depot maintenance funding to 92% (the maximum executable capacity) as we grow capacity on our flight lines. In addition, a nearly \$800 million increase requested in infrastructure will fund 33 Navy military construction projects -- the largest such request in over a decade and more than double PB-18. Recognizing the inherent link between readiness and lethality, the budget also increases procurement of high-end ship-, sub-, and air-launched munitions in FY-19, including Long-Range Anti-Ship Missile (LRASM), SM-2/6, Rolling Airframe Missile (RAM) Block II, Evolved Sea Sparrow Missile (ESSM) Block II, Advanced Lightweight torpedo, and Advanced Anti-Radiation Guided Missile (AARGM). And because the element of time is unforgiving, still other investments over the FYDP accelerate the delivery of critical capabilities and capacities into our magazines and launchers, such as multi-mission Maritime Strike Tomahawk (\$239 million), Mark-48 Heavyweight torpedoes (\$184 million), and Littoral Combat Ship Over-the-Horizon (LCS OTH) missile system (\$177 million). Finally, we continue to work to stabilize and incentivize the industrial base. The FY-19 budget also includes 12.7% capital investment in public shipyard depot facilities, exceeding the six percent legislative requirement, underscoring our commitment to increase our capacity to maintain and modernize our fleet.

As part of building readiness, we are also making immediate readiness improvements by funding the recommendations in our recent Comprehensive Review (CR) and Strategic Readiness Review (SRR). Across all appropriations categories, the budget requests \$79 million in FY-19 and continues to invest an average of \$130 million each year across the FYDP to address the individual and unit training, navigation equipment, command and control, and manning issues identified in the reports. We are also committed to improving the quality and duration of our training -- both at sea and in realistic, shore-based simulators. The FY-19 requests \$81.9 million over the FYDP to upgrade and integrate navigation, seamanship, and shiphandling trainers in Fleet Concentration Areas. We are already seeing progress: as just one example, a U.S.-based guided missile destroyer today has at least 30 more crew members onboard during the training phase *before* they are scheduled to deploy than a similar ship had in 2012 while *on* deployment. Additionally, we restored funded billets for our US- and overseas-based destroyer squadrons across the FYDP from 64% to 100% of the validated requirement, an increase of 306 total billets. This will add more experience in critical waterfront positions, improve the quality of our assessments, and ensure our units sail

over the horizon ready to meet any challenge they may encounter. We are exploring ways to adjust assignment policies and expand incentives because our commitment to prioritize manning for our deploying units -- particularly those ships, submarines, squadrons, and platoons based in Guam, Japan, and Spain -- remains steadfast.

A fundamental tenet of our budget request is that naval power is about maintaining balance across all six dimensions of naval power. Naval power is not a choice between increased capacity or better capability -- it is a combination of both. Naval power is not a choice between readiness and modernization -- it requires a balance of both. Naval power is not a choice between more complex stand-alone technologies or networked systems -- it is achieved through both. The talent to operate and sustain a larger and more lethal force is not a choice between more people or better training -- it must draw on components from both. Optimizing this balance ensures the fleet can maneuver as desired, respond when directed, and win in a short or prolonged fight.

Of course, no number of ships, no new technologies, and no crews of talented Sailors are, by themselves, sufficient to respond to today's complex challenges without commanders of competence and character to lead them -- they are the glue that binds our Navy team together. Just as we have done throughout our history, we will continue to develop and empower leaders who are obsessed with building teams that win.

From the Black Sea to the Bab el Mandeb, from the North Atlantic to the South China Sea, and from the Indian Ocean to the waters off the Korean Peninsula, the stakes are high. And as we have learned from history, war at sea -- whether lasting a day or a decade -- is unforgiving: the winners sail away and the losers sink to the bottom of the ocean.

Let there be no doubt: America is a maritime nation and a maritime power, and our way of life and our economic prosperity have always been linked to the sea. For 242 years, in rough seas and calm, America's Navy has operated around the world protecting our homeland from attack, ensuring common domains remain open, and advancing our interests to include defending our allies from military aggression.

In the competitive environment we face now and in the future, we must increase naval power in a balanced approach to meet our national strategic objectives. I am grateful to this committee and to your colleagues in the Congress for starting this important work, and we look forward to sailing alongside you to build the Navy the Nation Needs -- a lethal Navy for our enemies, a supportive Navy for our allies and partners, and a safe Navy for our Sailors.

Ms. GRANGER. Thank you.
General Neller.

SUMMARY STATEMENT OF GENERAL NELLER

General NELLER. Chairwoman Granger and Ranking Member Visclosky, members of the committee, I am here today to testify on the current posture of your Marine Corps. Thank you for that opportunity to be here, and I look forward to your questions.

I know this committee, the Congress, the American people have high expectations for our Marines as our Nation's expeditionary force in readiness. You expect your Marines to operate forward with our Navy shipmates, reassure our partners, deter our rivals, and respond to crisis. And when called to fight, you expect us to win. You expect a lot of your Marines, and you should.

As we hold these hearings, 34,000 Marines are forward deployed, some in harm's way, all engaged doing just what you expect them to be doing. Your Marines are an integral part of the new defense strategy, and, rest assured, we are doing our best to increase our competitive advantage against our strategic competitors.

That said, we continue to face challenges, some a consequence of rival adaptations, some a result of unpredictable funding, some as a result of our adjustment to the new strategic environment.

I echo and support what our Secretary and the CNO said. Since the fall of the Soviet Union, the sea services have enjoyed a well-earned, uncontested global dominance. Those days are over. Your Marine Corps remains capable, along with our Navy shipmates, but our competitive edge has eroded in every domain of warfare. We must modernize and address great-power competition or risk falling further behind.

As we look ahead to the 2019 budget, developing your next-generation Marine Corps requires modernization of our Corps, the continual recovery of our current readiness, and further investment to resource the next generation of Marines. These priorities, coupled with adaptations to our global posture, will provide our Nation's leaders the right capabilities at the right places to create the decisionmaking space necessary for the Nation to compete and, if necessary, fight at the lowest cost and resources possible.

Despite the challenges facing us in today's strategic environment, our Marine Corps remains the Nation's forward-deployed, agile expeditionary force in readiness as part of that Navy-Marine Corps team.

To preserve that role and sustain the readiness it entails, we continue to require sustained, adequate, and predictable funding to develop the right mix of advanced capabilities and ensure a ready and relevant force. With Congress's support and sustained commitment, we can begin to restore our competitive naval advantage, enhance global deterrence, and ensure that we send our sons and daughters into the next fight with every advantage that our Nation can provide.

I look forward to your questions.

[The written statement of General Neller follows:]

STATEMENT
OF
GENERAL ROBERT B. NELLER
COMMANDANT OF THE MARINE CORPS
BEFORE THE
HOUSE APPROPRIATIONS COMMITTEE - DEFENSE
ON
THE POSTURE OF THE UNITED STATES MARINE CORPS
7 MARCH 2018

Marines – Vital to our Nation’s Defense

As set forth by the 82nd Congress and reaffirmed by the 114th, the purpose of our Corps is to provide maritime expeditionary combined arms air-ground task forces that are “most ready, when the Nation is least ready.” We are a naval force whose mission requires us to be ready – a fight-tonight, forward deployed, Next Generation force – able to respond immediately to emergent crises around the globe either from the sea, forward bases, or home station. While our organization, training, and equipment must continually adapt to meet changes in the operational environment, this fundamental purpose is unchanging. Our adaptation requires consistent, predictable funding – a reality we haven’t witnessed in nine years. Your Corps continues to be responsible stewards of our Nation’s resources, innovating to meet new challenges and leverage new opportunities to further increase the lethality of our Marines. As our annual requirement to meet before this body and report our status, this statement aims to do three things: Broadly describe how your Marine Corps is adapting to increase its competitive advantage against pacing threats; explain our budget priorities for the President’s Budget Fiscal Year 2019 (PB19) submission; and describe how continued support from Congress will result in a more lethal force, postured to prevent conflict, yet ready to prevail in the next fight.

Our Contribution to National Defense

Combatant Commander (CCDR) demand for Marines and tailored Marine Air-Ground Task Forces (MAGTFs) continues to drive an aggressive operational tempo. We consistently maintain about 35,000, or one-third, of our operating forces forward deployed across the globe. Of those forward deployed forces, more than 11,000 served aboard Navy warships last year. Furthermore, our current posture encompasses several global tasks: Marines supporting multiple CCDRs with offensive air support and strikes from our Amphibious Ready Groups / Marine Expeditionary Units (ARG/MEU) afloat; building partner capacity in both Iraqi and Afghan Armies confronting Islamic State and Taliban fighters; providing critical fixed-wing and artillery fire support to coalition-enabled Syrian Democratic Forces as they fought to clear the Islamic State from Raqqa, Syria; providing tailored military combat-skills training and advisor support to foreign forces as part of Marine Corps Forces Special Operation Command (MARSOC); deterring aggressive behavior in the East and South China Seas through the forward posturing of 5th Generation aircraft within the Pacific; providing immediate disaster response from our ARG/MEU and Special Purpose Marine Air-Ground Task Force (SPMAGTF) to Americans in the wake of four hurricanes; supporting continued efforts to ensure freedom of navigation through the Bab al-Mandab strait; and enabling full spectrum cyberspace

operations while supporting Joint and Coalition Forces as part of Marine Forces Cyber Command (MARFORCYBER).

Marines continue to foster and strengthen relationships with our allies and partners, executing 62 joint, bilateral, and multinational exercises last year. Exercises like Balikatan in the Philippines, Eager Lion in Jordan, and Joint Viking in Norway, increase our effectiveness and help us to gain an understanding of how to best complement one another's strengths. The Marine Corps also maintains a vital relationship with the State Department, providing security at our Embassies and Consulates worldwide. Today, Marines routinely serve at 178 Embassies and Consulates in 148 countries around the globe. Marine Security Guard Security Augmentation Unit teams deployed 36 times last year at the request of the State Department, executing 17 Embassy / Consulate and 18 VIP (POTUS/VPOTUS/SECSTATE) security missions. In short, as the Nation's "911 force," we are forward postured across the Geographic Combatant Commands (GCCs), engaged daily in deterrence and security cooperation efforts, all while remaining capable of rapidly aggregating Marines from adjacent GCCs and the homeland to effectively respond to national crises.

Adapting to Increase our Competitive Advantage

The strategic environment continues to be complex, uncertain, technologically charged, and dangerous. The proliferation of modern conventional and cyber weapons to a broader range of state and non-state entities, along with the erosion of our competitive advantage in areas where we have long enjoyed relative superiority, is likely to continue as rival states and organizations attempt to contest our influence. Competition for natural resources, violent extremism, natural disasters, social unrest, cyber-attacks, regional conflict, and the proliferation of advanced weaponry and weapons of mass destruction create a wide range of challenges for a globally responsive force. Further, complex terrain, technology proliferation, information as a weapon, the battle of signatures, and contested domains are driving change across the strategic environment. Through the lens of these drivers, your Marines look for ways to adapt and modernize to increase our competitive advantage against pacing threats.

The ascendant threats posed by revisionist powers and rogue states require change – we must become more lethal, resilient and as a consequence, a more capable deterrent. The Navy-Marine Corps team can no longer rely on concepts and capabilities premised on uncontested sea control. We have begun to re-evaluate our capabilities to operate in all domains and conduct sea control, power projection, maritime security, and deterrence knowing that we must consider the tactical and

operational details of a contingency – and how our contributions could shape the strategic environment to prevent conflict. Modern sensors and precision weapons with expanding ranges and lethality are redefining how we assess our posture and relative combat power. Advanced defensive networks are forcing us to re-consider the methods of power projection required to compete against rising peers.

We have focused on *preventing* and *deterring* conflict by providing combined-arms task forces to theaters either already in crisis or at the risk of crisis to meet the Congress' mandate to be "...ready to suppress or contain international disturbances short of large-scale war." We remain poised to quickly respond within the Contact Layer should deterrence fail to keep local disturbances from cascading into larger contingencies requiring the attention and resources of the larger Joint Force. As stated within the recently released National Defense Strategy (NDS), we must re-posture in a manner consistent with being the Nation's sentinels – preventing large-scale war and managing crises as an extension of the naval force. Steady-state requirements have degraded our readiness to support naval campaigns and degraded our combined-arms training necessary to create credible combat deterrent forces. Two challenges must be addressed to remedy these problems – (1) the resilience of our posture and (2) the pace of our naval force's availability and modernization. We require Congress' assistance with aspects of each.

First, our global posture must adapt. To best adapt we must increase our strategic flexibility and freedom of action. The NDS introduces a Global Operating Model consisting of four layers – Contact, Blunt, Surge, and Homeland Defense – and apportions a combination of U.S.-based forces and theater-based ready forces to provide a method to mitigate the challenges outlined above. Your Marine Corps operates regularly within three of the four layers – Contact, Blunt, and Surge. ARG/MEUs, allocated forces, MARSOC, and MARFORCYBER are part of the Nation's Contact Layer – that competitive space where the military element of national power preserves the alignment of shared interests with our partners and allies. When competition escalates to conflict, these forces must be able to rapidly transition to combat operations. They are more often than not operating within the maritime domain, an area proving to be increasingly contested, compounding the challenges presented by the strategic environment. We must do so while simultaneously preparing to conduct challenging naval campaigns against adaptive competitors such as China and Russia. Despite being responsible and prudent with our Nation's resources, the cost of war and war readiness today is higher than ever. We have been innovative in meeting past challenges and leveraging emergent opportunities, yet we face ever growing threats from rising peers and irregular foes that require us to take a hard look at our global disposition.

The development and acquisition of long-range precision weapons by our Nation's chief competitors and threats – China, Russia, North Korea, Iran, and Violent Extremist Organizations (VEO) – have placed many of our forward deployed forces within the effective range of their weapons systems, or “threat rings.” Forward deployed and stationed Marines are now vulnerable to attacks in ways we have not considered for decades. To operate within the Contact and Blunt Layers, Marine forces must be combat-credible and oriented on warfighting to provide credible deterrence. Marines who are stationed at and rotate through III Marine Expeditionary Force (MEF) in the Pacific are forward postured, providing expeditionary forward presence. The Blunt Layer requires a resilient, dispersed basing posture with sufficient forward stockpiles of logistics items and a reliable command and control (C2) network to delay, degrade, and deny aggression. Conversely, most of our forward bases and stations lack sufficient resilience against long-range kinetic and non-kinetic attacks; thus, jeopardizing our ability to prepare, project, and sustain combat power. Efficiencies in the construction and configuration of these bases made possible by relative security now pose as risks; however, there are remedies to these problems. We need additional hardening of our facilities to include aircraft hangars and command posts, the capability to rapidly repair damage to our air stations, and counter-precision guided munitions and advanced air-defense capabilities.

From our current posture, rapidly aggregating Surge Forces will prove challenging. Responding to global contingencies against peer rivals in an expeditious manner may be contested every step of the way – we are going to have to fight to get to the fight. Surge Forces are those war-winning forces that deliver capable mass to the fight, primarily from the Continental United States, but also from across GCCs. They are highly ready and able to fight in all domains, degrading and penetrating anti-access area denial (A2AD) networks, as well as assuring access and projecting power with C2, fires, maneuver, and logistics. The rapid aggregation of Surge Forces is a problem that is not unique to the Marine Corps. Sea control has become more important now than in past decades, and the Marine Corps must further develop and integrate force capabilities in support of the Navy. This will require measured shifts from a focus on a near symmetric land-based enemy to an asymmetric view in which Marine forces ashore threaten enemy naval and air forces from expeditionary advance bases. There are elements of naval security cooperation concerning maritime security, all domain access, and power projection that could be assumed by the Marine Corps to alleviate pressure on our over-stressed fleets, particularly in the Pacific.

Secondly, the operationally available inventory of amphibious warships and connectors is well below the requirement to satisfy a competitive global strategy. This is forcing CCDRs to rely on

shore-based MAGTFs that lack the advantages resident in shipborne formations. 38 L-Class Amphibious warships are required to meet a 2.0 MEB Joint Forcible Entry requirement, and upwards of 50 would be needed to meet CCDR demand. Maritime Prepositioning Force (MPF) and Expeditionary-class ships offer cost effective alternative platform options to help mitigate a lack of warship capacity and for low-end, low-risk missions in an uncontested maritime domain; however, they do not supplant our L-Class warship requirement.

Ships acting within a networked fleet must contribute to the lethality of the fleet with the ability to protect themselves from air, surface, and sub-surface attack, while also possessing organic ship-to-ship and ship-to-shore strike weapons. Current amphibious ships lack these capabilities and therefore must rely on support from other combatants to perform sea control and power projection missions. This could be remedied by upgrading command and control suites, introducing vertical launch systems and organic air defense, decreasing ship signatures to become less targetable, and installing the ability to launch and capture the MAGTF's growing arrangements of unmanned aerial systems (UAS). Incorporating these capabilities, with the help of Congress, would increase the lethality of our ARG/MEUs and the entire Joint Force while supporting operations throughout the Range of Military Operations (ROMO).

Increasing the Lethality of Our Corps

Your Marines continue to innovate and build a Next Generation Marine Corps – a lethal, adaptive, and resilient Corps that implements combined arms as a means to conduct maneuver warfare across all domains, no matter the challenge – directly supporting the NDS, ready to fight and win across the ROMO. This transformation began in 2016 with the implementation of the Marine Corps Operating Concept (MOC). The MOC represents our institutional vision for how the Marine Corps will operate, fight, and win despite the challenges described above. As mentioned at the outset of this statement, while the Corps' fundamental purpose does not change, our concepts – and the organization, training, and equipment changes they drive – must adapt to effectively accomplish it. The MOC provides the foundation and context for subordinate operating and functional concepts – like Littoral Operations in a Contested Environment and Expeditionary Advanced Base Operations (EABO) – and it guides our analysis, wargaming, and experimentation. Further, the MOC drives the evolution of our Service doctrine, organization, training, materiel, leadership and education, personnel, and facilities (DOTMLPF) through a detailed and thorough Capabilities Based Requirements System.

Whereas the MOC provides the concept for how Marines will fight and win, it is through extensive experimentation and wargaming that we validate our capability development choices and inform our investment strategies. Our experimentation and wargaming focuses on designing a balanced MAGTF, optimized for the future that incorporates Marines capable of leveraging cyber, information, and artificial intelligence capabilities. As a driver of innovation to identify these future capabilities, our Marine Corps Warfighting Lab (MCWL) completed the first phase of our long-range experimentation plan called Sea Dragon 2025, which focused on augmenting an infantry battalion with experimental equipment, developing an analytically-based wargaming process, and leveraging commercial technological advances through our Advanced Naval Technical Experiment series. Phase two of Sea Dragon 2025 is underway, initiating our Experiment Campaign Plan. This plan spans three years, focusing on MAGTF hybrid logistics, operations in the information environment, and EABO. Through these efforts, the Marine Corps will continue to adapt and refine our capability development, force structure, and investment strategy that modernizes the force.

Our 2019 Budget

Our overall theme for PB19, *Modernizing for the Future Force*, focuses on three key budget priorities – *modernization, readiness, and manpower* – directly aligning with the Secretary of Defense’s guidance to improve warfighting readiness, achieve program balance, and increase lethality. Driven by Marine Corps Force 2025 (MCF 2025), the capability investment strategy which modernizes the force toward implementing the MOC, we plan to rebuild a more lethal, maneuverable, and resilient force able to operate in the emerging strategic environment. To accomplish this goal, we require a budget that is delivered on-time, with consistency – adequate, sustained, and predictable funding is needed to properly plan for and resource a ready, capable force. That said, your Marine Corps remains committed to building the most ready force our Nation can afford, allocating \$40.4 billion to our ground and aviation baseline budget, and an additional \$3.1 billion in Overseas Contingency Operations funding as part of the PB19 submission – a 7% increase over last year’s submission. We plan to use the resources to increase our lethality to maintain our military advantage in a fiscally prudent and executable manner, addressing critical modernization requirements and investing in key warfighting capabilities without sacrificing near term readiness. Additionally, we plan to resource our infrastructure reset, Indo-Pacific strategy, new structure, materiel, munitions, maintenance and training requirements that together generate the right capability and capacity required. Allocating money

across our budget priorities supports Department of Defense (DoD) guidance to restore military readiness and provide solutions that proactively shape the strategic environment.

The Marine Corps is committed to audit readiness and business reform, viewing both as critical enablers to Warfighter readiness. The Marine Corps recently completed the Full Financial Statement Audit for Fiscal Year (FY) 2017, the first within the DoD. Although a disclaimer was issued for this first-year effort, the Marine Corps continues to push forward as the lead military service for a full audit of its financial statements. The Marine Corps has a commitment to achieve and sustain favorable audit opinions regarding the presentation of its annual financial statements. The transparency afforded with auditable financial statements demonstrates our commitment to the prudent management of taxpayer provided resources. Efficiencies gained through audit efforts enhance the overall support to the Warfighter and ensure the effective use of funds received. Progress will be measured not by the auditor's opinion in 2017, but by the velocity of corrective action as we continue to improve financial processes, systems, internal controls and accountability of equipment to achieve a clean financial opinion in the years to come. As the rest of the military services commence their full financial statement audits in FY18, the Marine Corps continues to share our lessons learned across the Department.

As part of ongoing business reform initiatives, the Marine Corps has identified more than \$3.6 billion in savings and cost avoidance, \$567 million in FY19 alone, to provide for reinvestment in warfighting readiness. We continue to make strategic choices in the divestiture of certain programs to reallocate funds toward building a more lethal, modern, multi-domain, expeditionary force. This has included reducing depot level maintenance for the legacy Light Armored Vehicle (LAV) and Assault Amphibious Vehicle (AAV) as we look to accelerate the replacement of each vehicle. Similarly, the Marine Corps' Infrastructure Reset Strategy seeks to improve infrastructure lifecycle management and ensure infrastructure investments are aligned with Marine Corps installations that are capable, adaptive, and economically sustainable platforms from which to generate readiness and project combat power in a fiscally constrained environment. Implementation of this strategy consolidates and appropriately resets the infrastructure footprint within existing installations to improve operational readiness and generate resources for reinvestment.

Marine Corps business reform initiatives have also included the more effective use of operating resources and force restructuring throughout our military and civilian manpower. An in-depth organizational structure and design review of Marine Corps Systems Command, for instance, led to a reorganization to enhance MAGTF alignment across product lines, maximizing economy of force by

reducing overall program office structure, achieving better rank and responsibility alignment, and optimizing alignment with key stakeholders. In another example, a review of our ground conventional ammunition portfolio led to training requirements refinement; the use of new, less-expensive training munitions; and the elimination of duplicative munition requirements. We are focused on continuing business reforms in FY19 that foster effective resource management and streamline the requirements and acquisition process.

Modernization – The Foundation of Our Future Readiness

Our Marine Corps must be modernized to meet the demands of the strategic environment. Given this urgency, we appreciate the Congressional action to improve acquisition through the National Defense Authorization Acts of FY16 and FY17, and we continue to leverage the opportunities provided by this legislation. While we are leveraging technology to advance promising capabilities in a range of information related areas, funding stability and flexibility must be increased to enable us to keep up with the rapid pace at which technology evolves. What we desire to achieve is a Corps capable of exploiting, penetrating, and destroying advanced adversary defenses in all domains in support of naval or Joint Force operations. That modernized force would deter adversaries, prevent conflict, and provide capabilities required to "...suppress or contain international disturbances short of large-scale war;" thus, preventing the consumption of readiness from the larger Joint Force. To do that, we must be afforded the flexibility to experiment with new technologies available on the market, determining what will work best in the future operating environment, and then delivering those capabilities to the force quickly to mitigate the rapid rate of technological change. Our newly chartered Marine Corps Rapid Capabilities Office (MRCO) accomplishes that end, seeking emergent and disruptive technologies to increase our lethality and resiliency. The MRCO leverages FY16 and FY17 NDAA provisions and partnerships to accelerate the acquisition process – with the consistent and steadfast support of Congress – we will continue to fund this office. Accelerated modernization is the most effective remedy to our long-term readiness problems and we must abstain from burying our modernization efforts under cumbersome acquisition processes – we have to get this right.

PB19 provides \$13.8 billion towards our investment accounts, nearly 32% of our total request to modernize the force. This represents a 19% increase in investment funding over our FY18 budget submission. The PB19 investment approach is synched with the implementation of MCF 2025, specifically investing in areas such as: Information Warfare (IW), long range precision fires, air defense, C2 in a degraded environment, and protected mobility / enhanced maneuver. These capability

areas support building a Next Generation Marine Corps across the Active and Reserve components of the force. This approach includes changes to the structure of our Tables of Equipment into equipment sets that balance affordability with the need for a networked, mobile, and expeditionary force. Over the past decade and a half, fiscal instability, funding decreases, and operational demand increases have forced us to take risk in modernization to preserve readiness, deferring critical future aviation and ground programs. PB19 continues the efforts started by the FY17 Request for Additional Appropriations and PB18 to reverse this trend by investing in, and in some cases accelerating, our modernization programs that directly correlate to improved readiness by reducing unit costs, increasing efficiencies, and providing needed operational capabilities sooner.

PB19 invests in our C2 capabilities needed to build a Next Generation Marine Corps that will dominate the information domain. This requires transforming MAGTF C2 through a unified network environment that is ready, responsive, and resilient, with initiatives that integrate Navy and Marine Corps systems. Enhanced C2 and digitally interoperable protected networks are modern capabilities that will facilitate improved battlefield awareness to and from small, dispersed tactical units – achieving this end is my top acquisition priority. Such programs as Tactical Communication Modernization (TCM), Common Aviation Command and Control Systems (CAC2S), and Networking On-the-Move (NOTM) provide significantly increased capabilities associated with maneuver and fires across the battlespace. As warfare evolves into a battle of signatures and detection, these information capabilities are vital to maximize the lethality, maneuverability, resilience, and effectiveness of our multi-domain, naval expeditionary forces.

We continue to prioritize the integration of information capabilities throughout the MAGTF. Within the Command Element, investments in the Marine Intelligence Program allowed the formation of the MEF Information Group (MIG) to establish IW coordination centers for MAGTF Commanders, filling the IW gap at the operational level. Additionally, we have increased funding to MARFORCYBER to man, train, and equip cyber forces and conduct full-spectrum cyberspace operations. The coordination, integration, and employment of information and cyber capabilities will enable the MAGTF Commander to facilitate friendly forces maneuver and deny the enemy freedom of action in the information environment.

The Ground Combat Element (GCE) is likewise being adapted to operate and fight more effectively in the strategic environment through the incorporation of information-related capabilities and the overall modernization of its ground formations. PB19 continues to invest in key ground systems like the ACV 1.1, Ground / Air Task Oriented Radar (G/ATOR), High Mobility Artillery

Rocket System (HIMARS), and Increment 1 of the Joint Light Tactical Vehicle (JLTV). Furthermore, investments are being made to ensure more technological advances are being incorporated into our infantry units. We continue to increase the maneuverability, lethality, and resiliency of our infantry by decreasing loads, enhancing Company Level Operations and Intelligence Centers, increasing small UAS capacity and unmanned teaming with robots, adding engineering capacity to provide direct support to every infantry battalion, and increasing long range fires capacity. It is in areas like these that we need to garner flexibility within our acquisition process to assist in the streamlining of our modernization efforts. We must be able to outfit the individual Marine with the most modern technology and gear as soon as it becomes available. The investments being made across the GCE will result in a more lethal fighting force able to better support the Joint Force across the ROMO.

PB19 invests in our aviation systems to modernize the Aviation Combat Element (ACE) by funding increases in the procurement of 5th Generation aircraft. The Marine Corps is challenged to replace aging aviation platforms that have reached the end of their service lives or suffered accelerated wear in ongoing combat operations. Our aviation modernization plan is a phased multi-year approach to modernization that encompasses aircraft transitions, aircraft inventory shortfalls, manpower challenges, safety and fiscal requirements. Our modern expeditionary force requires fixed-wing aircraft capable of flexible basing ashore or at sea in support of our Marine units. A top priority is the F-35B/C and its future sustainment. This aircraft is not just a replacement for three aging platforms; it provides transformational electronic and information warfighting capabilities for the future naval and Joint Force. Maximizing the potential of this aircraft requires further analysis of our joint training ranges to ensure our aircrews are able to train to its full capability. Other priorities for aviation include investing in lethal, persistent, multi-role intelligence, surveillance, and reconnaissance (ISR) Vertical Take-Off and Landing (VTOL) UAS like our MAGTF Unmanned Expeditionary (MUX) program; supporting capabilities such as electronic attack; implementing robust strike weapons programs; creating manned-unmanned teaming capabilities; and pursuing other sustainable modern aviation platforms ultimately increasing our competitive advantage against current rivals. Additionally, the CH-53K (Heavy Lift Replacement) remains a critical replacement to the CH-53E, as it has triple the lift capacity and is the only maritime, heavy-lift helicopter capable of supporting current and future warfighting concepts. Much like the MV-22 Osprey, this helicopter will change the scope of our amphibious operations through its increased lift and load capacity.

The Next Generation Logistics Combat Element will optimize tactical distribution with unmanned platforms, flatten the supply chain through additive manufacturing (AM), and enhance

preventive and predictive supply / maintenance with sense and respond logistics. Further, state-of-the-art logistics C2 / Information Technology, enabled by artificial intelligence, will extend the operational reach of the MAGTF. Our MCWL and Next Generation Logistics (NexLog) organizations continue to stay at the cutting edge of military innovation. Marines are at the forefront of this effort, optimizing the potential of AM in garrison and overseas in austere environments. Our Marines are the world's military leaders in the realm of 3D printed tactical level unmanned aerial vehicles and using AM to produce time and mission critical components. We have more than 70 3D printers throughout the Marine Corps, and are fostering innovation through the establishment of "makerspaces" (areas where 3D printers are made available for use by Marines) in the operating forces and supporting establishment. Once fully integrated, this capability will enable our Marines to create custom solutions to tactical problems, enhancing flexibility and speed, while fundamentally altering the supply chain and wartime logistics. We are experimenting with various unmanned aerial and surface platforms to increase our ISR and logistical capacity and capability on the modern battlefield. Lastly, we are conducting a series of innovation symposiums and challenges to harness the creative energy of all Marines in the development of Next Generation warfare capabilities for this century's five domain warfighting environment. This is the future and your Marines are working to change the way we conduct logistics in combat.

Readiness – The Core of Our Ethos

The Marine Corps is unique among the Armed Services because your expectations require Marines to be a fight-tonight, forward deployed force, ready and capable of acting with minimal preparatory time – we should therefore be resourced accordingly. Our ability to rapidly deploy Marines to support missions across the spectrum of conflict is incompatible with tiered readiness. Marines do not get ready when a crisis occurs; we must be forward deployed and ready to respond immediately from within our rival's threat rings. PB19 provides \$13.1 billion towards our operation and maintenance accounts, over 30% of our total request, enabling us to meet all of our steady state and contingency requirements within established timelines, while balancing efforts across the force to meet operational demands.

The Marine Corps is committed to building the most ready force “to suppress and contain international disturbances short of large-scale war,” and one capable of gaining and maintaining sea control as required by the larger naval force. Readiness, however, is the product of two metrics. The first is the ability of the force to execute its mission with ready people, ready equipment, and the right

training. The second metric compares the force against potential adversaries in various circumstances. Within the context of global competition against rising peers, the scope of the second metric grows dramatically. For instance, if our units are ready (near-term readiness levels), then by the first metric we are ready. If, however, the force is outranged or outpaced by potential adversary capabilities (long-term capability modernization), then by the second metric we are not ready. We either assume risk to mission or modernize our capabilities to mitigate against the second metric.

The Marine Corps is ready to execute missions assigned with deployed and next-to-deploy forces, but maintaining this readiness has come at the expense of the readiness of non-deployed forces, modernization, and infrastructure sustainment. This shortfall in readiness of our non-deployed forces limits our ability to respond to unexpected crises or major contingencies. In the event of a major contingency, degraded units could either be called upon to deploy immediately at increased risk to the force and the mission or require additional time to prepare, thus incurring increased risk to mission by surrendering the initiative to our adversaries. The FY17 RAA provided the investment needed to arrest this decline, and the PB18 and PB19 budget submissions provide the resources needed to accelerate our readiness recovery.

Another aspect of our readiness for major combat operations involves the capacity of our War Reserve Materiel to enable and sustain large-scale force mobilizations for major contingencies against rising peers. Historically, readiness of deployed and next-to-deploy forces also takes precedence over War Reserve Materiel, increasing risk and cost in the event of a major contingency. PB19 invests in our War Reserves in such areas as munitions and emerging starter stocks, maintenance modernization, and our MPF fleet; all vital parts of our Surge Forces. It also invests in our prepositioning programs in Norway, which includes the maintenance of our prepositioned equipment. The security threats to our Nation, as articulated by the Secretary of Defense and Chairman of the Joint Chiefs of Staff, demand that America has a globally responsive, truly expeditionary, consistently ready, forward-postured naval force. This is beyond dispute. To deliver on that requirement, there are four primary challenge areas within readiness that the FY19 budget addresses: aviation; amphibious, maritime, and expeditionary ships; deployment-to-dwell; and infrastructure.

Aviation

Our most acute readiness issues are in aviation units. A combination of aging aircraft, a lack of ready basic aircraft, an unresponsive supply of parts and spares, and maintenance backlogs at the depots contribute to high over-utilization rates of available aircraft needed for training and

certifications. This in turn hastens the induction of these aircraft into maintenance cycles. Lack of predictable and stable funding affects industry. Often when funding becomes available late in the year through Continuing Resolutions, the industrial base is not energized to meet demand. This negatively influences training and certification opportunities for our maintainers and aircrew.

Our priority remains building aviation readiness for combat by balancing modernization with readiness recovery. PB19 works to assist with this by providing support to our comprehensive aviation recovery plan that, *if sufficiently resourced and supported by our industrial base*, recovers the force to an acceptable readiness level by FY20 with a ready bench by FY22. Further, PB19 plans to fund aviation readiness accounts at maximum levels and spares at 93% of the requirement across both legacy and Next Generation platforms. We are also continuing to fund and support readiness initiatives to the F/A-18, CH-53E, and MV-22B. Budget challenges, production delays, and increasing sustainment costs for aging aircraft place the recovery plan in a fragile state – this readiness goal has already been delayed once. While aviation readiness recovery remains a priority – the introduction of the F-35B/C and accelerated modernization of our Next Generation ACE is just as important. Furthermore, the continued funding of legacy aircraft is a necessary bridge to the future as we continue to increase the size of our Next Generation fleet of aircraft.

Amphibious, Maritime, and Expeditionary Ships

The Joint Force must maintain access to and the ability to maneuver through the global commons, project power, and defeat a competitor attempting to deny freedom of action via the employment of A2AD capabilities. To meet these challenges, the naval force must be distributable, resilient, and tailorable, as well as employed in sufficient scale and for ample duration. Due to existing shortfalls within our amphibious, maritime, and expeditionary ship capacity, the naval force currently struggles to satisfy these basic requirements – an issue that will only grow worse over time if we cannot remedy our current budgetary issues. PB19 puts us on a path to address these issues, but we need Congress to act on this in a timely manner, consistent with a return to the regular order of business.

The naval services must have optimally trained and equipped amphibious forces tailored to each theater and threat and ready to deploy with a suitable quantity of forces, on the designated timeline, and with the reservoir of non-deployed yet ready forces that can surge to meet the demands of large-scale operations or unplanned contingencies. The operational availability of the existing amphibious fleet is insufficient to meet global demands, negatively impacts the unit training necessary

to recover full spectrum readiness, and does not support CCDR requirements for power projection. Consequently, the strategic risk to the larger Joint Force and mission is increased. The Navy possessed 62 amphibious ships in 1990, yet possesses only 32 today. Of the 32 amphibious ships, 18 are available to support current or contingency operations. The stated requirement of 38 amphibious warships is the minimum number to fulfill our Title 10 obligation. Resourcing to a lower number puts CCDRs requirements and contingency response timelines at risk. The Navy and Marine Corps are currently operating below the minimum acceptable level and will continue to do so until FY33 when we reach the minimum amphibious ship requirement of 38 per the FY17 30-year shipbuilding plan. That said, we recommend exploring the acceleration of LHA-9 – a project that can begin within the out years of the FYDP, bringing continuity to our industrial base and directly increasing the lethality of our Navy and Marine Corps team.

While some ships in the amphibious inventory have undergone upgrades to support the F-35B and are fundamentally more capable platforms than those they replaced, the naval force lacks the capacity necessary to conduct requisite training to build total force amphibious readiness and simultaneously prevent conflict. The Marine Corps, in coordination with the Navy, is exploring innovative ways to employ alternative platforms for amphibious operations in more permissive environments in order to provide more global coverage in the most resource-appropriate manner. These alternatives are by no means replacements for amphibious warships, but instead provide cheaper, additive alternatives in certain environments. Tailored MAGTFs afloat on these vessels would replace those on shore due to limited shipping. Regardless of the ship, whether an LHD equipped with F-35Bs and MV-22s or an Expeditionary Sea Base with embarked crisis response forces, Marines require additional maritime expeditionary shipping to satisfy current requirements and the NDS. Congress could help remedy this by supporting the PB19 request.

Ship-to-shore connectors move personnel, equipment and supplies, maneuvering from a sea base to the shoreline. These are critical enablers for any naval force. Modern aerial connectors, such as the MV-22 Osprey and CH-53K, extend operational reach and lift capacity, revolutionizing our ability to operate from the sea, austere locations, and previously damaged airfields within a contested environment. Aerial connectors alone do not suffice; the Navy is in the process of modernizing the surface connector fleet by replacing the aging Landing Craft Air Cushion (LCAC) and the 50-year-old fleet of Landing Craft Utility (LCU). This system of surface and aerial connectors would enable the Joint Force to establish a web of sensor, strike, decoy, and sustainment locations based on land and sea that would complicate the strategic and operational decision making of our most advanced rivals, thus

attacking their A2AD strategies. Continued funding of the modernization, maintenance, and service life extension programs of our existing fleet of connectors is critical to enabling our success in future security environments.

Mine Countermeasure (MCM) capabilities are *consistently underfunded*, affecting the Joint Force's ability to operate in the littorals. The assault element of an amphibious task force, as well as any amphibious force maneuvering to establish expeditionary advanced bases, requires assured maneuver through very shallow water, surf zones, and beach zones to inland objectives. The Naval force has a deficiency in MCM capability and capacity in these areas, which has a direct effect on options available to fleet commanders within contested seas. Naval MCM is in a transitional period where legacy systems are reaching the end of service life. Although PB19 extends the service life of four MCM systems, we must accelerate future capability to ensure continuous MCM coverage during the shift from legacy to future MCM systems. Future MCM systems could provide solutions to identified gaps in detection and neutralization in very shallow water, the surf and beach zones. Sufficient, sustained, and focused resourcing for this transition is needed to provide required capabilities and capacities – a critical capability to support amphibious operations. If the naval force possessed the capability to easily overcome layered mine defense in contested near-seas, such as the South and East China Seas, through a more robust MCM capability, then we would in effect be attacking the adversary's A2AD strategy. This would demonstrate our ability to penetrate their defenses at a time and place of our choosing, and force them to revalidate assumptions, change decisions, and invest in other more costly capabilities. Assured naval surface access and assured sea control cannot be achieved without an acceleration of our MCM capabilities.

Deployment to Dwell

The rate by which Marines deploy largely depends upon what unit they are assigned to and the operational demand for those units. Currently, that rate is favorable for Marines assigned to many of our headquarters elements; however, a majority of the Active Force is experiencing a deployment to dwell (D2D) ratio that is unsustainable. We confront this challenge daily. While these demands are clear and unmistakable evidence of the continued relevance of Marines, this tempo is not sustainable as it limits time to train to our full naval mission sets. We must return to a 1:3 D2D force to have the time required to train for the high-end fight and achieve balance with our Marines and their families at home. Continued high operational tempo is affecting our ability to retain Marines and we need to ensure we are doing what we can to sustain our career force.

There are three types of Marines in our Corps: those who are deployed, those getting ready to deploy, and those who just returned. PB19 supports an 186,100 Active and 38,500 Reserve component end-strength force while maintaining an approximate 1:2 D2D ratio in the aggregate. Funding at a 1:2 D2D ratio, although not sustainable, is a conscious, short-term decision we must make to balance modernization while meeting current demand and simultaneously recovering our readiness. We owe our Marines and their families the necessary time to reset and train for the next deployment or contingency. Historically, Marines have benefited from being a 1:3 D2D force. The Marines that were not deployed, had adequate time to prepare across the full spectrum of conflict and could be counted on to be ready when called upon to reinforce their teammates if a major contingency happened. This would require a substantive increase in supply or decrease in demand – we are not asking for the former in this year’s budget. Consequently, a temporary reduction of our operational tasking is required to improve our D2D ratio. Although accepted in the short-term for the reasons outlined above, we must not accept a 1:2 D2D as the new normal. We routinely talk about our readiness – fixing these dwell challenges will help to better our readiness.

Infrastructure

We must prioritize Infrastructure Reset – we must improve infrastructure lifecycle management and ensure infrastructure investments are aligned with Marine Corps capability-based requirements to support the warfighting mission and contribute directly to current and future Force readiness. PB19 funds the Infrastructure Reset Strategy with realized long-term cost savings through a reduction of 1056 failing structures (14 million square feet) during the Future Years Defense Program (FYDP) and yield savings in Facilities Sustainment, Restoration and Modernization (FSRM) accounts. Our installations provide three critical force enabling functions. First, they are deployment platforms from which our expeditionary forces fight and win our Nation’s battles; second, they are where our MAGTFs train and hone their combat readiness; and third, they house our Marines and families.

The Marine Corps has historically taken risk in facilities funding to protect near-term readiness and service-level training. While proposed investments in FSRM will allow our facilities to maintain an average condition, if long term underfunding of FSRM requirements continue, the progressive degradation of our infrastructure will result, potentially creating a bow wave of long-term costs and in a manner inconsistent with the National Security Strategy (NSS), NDS, or National Military Strategy (NMS). PB19 begins the work to ensure our infrastructure is resilient against not only long-range precision strike, but also cyber-attacks. The greatest need of enhanced resilience exists on our

strategically significant overseas bases in the Pacific on Okinawa and Guam. These locations are vital to reassuring partners and allies in the region.

Manpower – Growing and Sustaining Our High Quality People

Our people – Marines, civilians, and their families – are the foundation of all that we do; they are our center of gravity. PB19 provides \$15.7 billion towards our manpower accounts, over 36% of our total request as it begins to implement MCF 2025. It also supports building a more experienced, better trained, and more capable force by increasing the number of Marines we have with special skills like MARSOC; those required for intelligence operations; and electronic, information, and cyber warfare. Our manning requires leaders with the grade, experience, and technical and tactical qualifications associated with their billets, which is essential to the Marine Corps as a “fight tonight” force. The resources we dedicate to recruiting, retaining, and developing our people directly contribute to the success of our institution. Our commitment to our Marines, their families – and the civilians who support them at bases, stations, and depots across the globe – must never waiver.

Marine recruiters consistently meet our recruiting goals by finding motivated and qualified men and women within our Nation who are willing to raise their hands and volunteer to wear the Eagle, Globe, and Anchor. These men and women are smarter and more capable than past generations and we continue to effectively lead them, both at home and in combat. Devoted to upholding our values of honor, courage, and commitment, we are dedicated to holding ourselves to the highest standard of personal conduct. To this end, we have taken an introspective look at our culture in light of social media controversies and have created a task force and permanent office to examine and correct conditions that enable disrespect or misconduct to exist. We are committed to ensuring Marines treat each other with dignity and respect. As issues arise, our commanders take necessary action to ensure we maintain an organization that values the contributions of all Marines based on their individual merit and commitment to warfighting excellence.

Increasing the effectiveness of our Marines requires constant reflection on how we conduct training; training to prepare for combat and training that sustains the transformation of Marines into resilient leaders who are mentally, morally, and physically fit. That transformation begins with entry-level training, whether it be recruit training or Officer Candidate School, and continues throughout a Marine’s service – whether it be a single enlistment or 40 years. We believe in returning quality citizens to society when they leave the Marine Corps – entry-level training is where that begins.

Over the last year, we have examined how we conduct recruit training and made adjustments, while strictly maintaining the standards necessary to ensure all Marines are proficient in the skills required of our Nation's premier warfighting force. We have integrated a majority of the recruit training phases at Marine Corps Recruit Depot Parris Island. Additionally, the Recruit Depots have redesigned the last 11 days of entry-level training – as a new, fourth phase – to enhance a recruit's new identity as a Marine. The training focuses on mentorship and leader-led instruction aiming to better prepare the new Marines for the transition to follow-on training and the operating forces. The newly created Transformation Enhancement Program (TEP) improves our existing curriculum at our Formal Schools – reinforcing the values and principles emphasized during the Fourth Phase of recruit training. The TEP has been implemented at our combat training battalions and Schools of Infantry with plans to continue implementation into all formal schools over the next year.

Our Marines want to deploy, serve our Nation, and protect our country from threats overseas. As Marines, we pride ourselves on being ready and on training for combat in conditions that are as close to reality as possible to enable success when called to fight. To ensure their success in future conflicts, we continue to build upon our lethality as we adapt our training, driving changes in our programs. Conducting combined arms in multiple domains, counter-unmanned aerial systems, managing signatures, and increasing integration of simulation technologies are all part of the new training regimen. Innovation remains a critical aspect of our Corps as Marines continue learning through the testing and evaluation of new methodologies and technologies to gain advantage over our rivals. Cyber operations, information and electronic warfare, more capable command and control, intelligence, engineering, civil-military operations, manned-unmanned teaming, robotics, AM, and the leveraging of artificial intelligence are critical skills we need for the future fight. Accordingly, we are updating course materials and developing new programs of instruction to ensure the Marine Corps remains a step ahead of our rivals.

Taking care of our Marines, civilians, and their families is a key element of overall readiness, combat effectiveness, and warfighting. Today's requirements mandate that we not only provide equipment, but also focus on other important aspects of readiness, such as family stability, housing, spousal support, behavioral health, education, professional development, transition assistance, financial literacy, and wounded warrior support. Deployment Readiness Coordinators help ensure our families get the support needed before, during, and after their Marines deploy. Additionally, our comprehensive packages of services (Sexual Assault Prevention and Response; Suicide Prevention and Response; Behavioral Health; Wounded Warrior Regiment; Personal and Professional Development;

and Transition Assistance) support the complete fitness and readiness of our Marines and their families. The Marine Corps remains focused on solutions to reduce destructive behaviors, particularly sexual assault, suicide, hazing, and excessive alcohol consumption. The abuse of alcohol is a known factor and contributor across the spectrum of force preservation issues and negatively impacts the readiness of our force. We are keenly focused on dramatically reducing these destructive behaviors.

Conclusion

Today, the Marine Corps faces many challenges; some as a consequence of rival adaptations, and some as a result of unpredictable funding. Years of sustained operations ashore in Iraq and Afghanistan have increased the divide between the Marine Corps and the Navy. For years, the Marine Corps and Navy have taken presumptive sea control for granted, despite warnings. We have focused on power projection and assured access, assuming sea control would remain uncontested. Since the fall of the Soviet Union, the Sea Services have enjoyed well-earned, uncontested global dominance. Those days are over. We need to modernize and address peer competition or risk falling further behind. Our budget priorities, coupled with the evolution of our global posture, will provide our Nation's leaders the right instruments of power and the right places to create the decision-making space necessary for competition and contingency at the lowest cost in resources possible.

The Marine Corps will adapt its global posture. As a naval force, deployed Marines predominately reside aboard ship, fully integrated with the Navy and expanding the competitive space and advantage of the Joint Force. The ocean provides flexibility, freedom of maneuver, survivability, and agility. Despite being the subject of competitor tracking, hitting a moving target is much more difficult than one that has been in the same position year after year, and thus affords much greater unpredictability – imposing a cost on any competitor. In recent history, we have found our forces tied to fixed locations in special arrangements to support necessary requirements during times of increased instability throughout specific regions of the globe. We must put these forces back on ship, whether on upgraded amphibious warships postured to respond to conflict or on alternative platforms. This postures us to assure partners and allies, compete with rivals, and defeat VEOs. We recognize the continued issues with our amphibious, maritime, and expeditionary ship inventory; however, we must focus on increasing the capabilities of the ships we do have, while developing cheaper alternatives for more permissive environments.

We will continue to foster and strengthen our partnerships and alliances as today's strategic environment requires strong global partners. When our adversaries choose to test our will or

capabilities, we must be ready with our allies to act with the appropriate force to overcome those hostile acts with such speed and decisiveness as to prevent further acts of aggression. We will prioritize those joint, multinational and bilateral exercises that offer the greatest return on investment as measured in readiness gains with select partners. These exercises increase our lethality as we gain an understanding of where we can strengthen each other's weaknesses.

Despite the challenges facing us in today's strategic environment, our Marine Corps remains the Nation's forward deployed, agile, Expeditionary Force in Readiness. As the service with unique readiness requirements, we require sustained, adequate, and predictable funding to develop the correct mix of advanced capabilities and ensure a ready force. As we look ahead to the 2019 budget, we have prioritized the modernization of our Corps, the recovery of our current readiness, and investments to resource the next generation of Marines. The continued investment in these priorities will ensure Marines are capable as a high-end, conventional combat deterrent, able to respond to immediate contingencies and conduct crisis response across the continuum of conflict. With the Congress' support and sustained commitment, we can begin to restore our competitive naval advantage, enhance global deterrence, and ensure that we send our sons and daughters into the next fight with every advantage our Nation can provide.

Ms. GRANGER. Thank you very much.

Before we begin questions, in the interest of time and in fairness to our briefers and all the members, we will limit each member's question to 5 minutes.

And I would ask that those who are asking questions, if you are going to direct your question to one particular person, please do that. If not, indicate that you would like to ask that question of the entire panel.

Mr. Visclosky and Chairman Frelinghuysen have both said they will wait and move to the end. So I will follow their wonderful tradition and do the same thing and call in order of the time that you arrived at the hearing.

Mrs. Roby will go first.

LCS

Mrs. ROBY. Whoa. This is an unusual turn of events. I did get here a little early today.

The Navy's 30-year shipbuilding plan maintained the recommendation for 52 small surface combatants. As the LCS has been plagued with issues, I want to just talk about, in recent media articles, the Navy has stated that one LCS is sufficient to sustain the shipbuilding industrial base in the hot production lines as you transition to the new frigate.

Both LCS shipbuilders have publicly stated that they do not believe that—one ship in the fiscal year 2019 budget—there is enough work to sustain the industrial base in hot production lines going into the frigate competition.

So can you explain your differing position on the industrial base from those who comprise the industrial base?

Mr. SPENCER. Congresswoman, thank you.

As you read in the 30-year shipbuilding plan, one of the key attributes that we wanted to make everybody aware of is, yes, we need to increase our capacity, but we also need to understand what the industrial base can absorb and how we can work as partners with the industrial base while purchasing our assets at the most effective and efficient rate.

We believe, between 2018 and 2019, having four LCSs in the line for the yards will provide them, granted, not optimal—we believe that is a good sustaining rate for both yards as we move into what is going to be a very robust competition for the frigate, which, as you know, looks like fiscal year 2020, decisions, and 2021, build.

AIR-LAUNCHED AND SURFACE-LAUNCHED MISSILES

Mrs. ROBY. Thanks.

And, Admiral Richardson, as you know, the long-range anti-surface missile LRASM is made in my district, in Troy, Alabama. And I realize we can't discuss all of its capabilities in an unclassified setting, but I am impressed with what I know. And I am glad that the Navy has asked for an additional 10 missiles on its unfunded priorities list.

However, I am concerned that this is currently only an air-launched missile. Wouldn't it be prudent for the Navy to also develop a surface-launched variant, whether it be from the vertical

launch system, tube, or topside launcher, to help provide you with distributed lethality?

And then, also, I understand that some would consider this an expensive missile, but on a cost-per-kill basis, compared to everything else the Navy has, it seems quite inexpensive.

Admiral RICHARDSON. Ma'am, we agree. And we are accelerating the production of that missile. We have moved it into the air-launched, as you said, and we are investigating expanding that to surface-launched applications as well.

Mrs. ROBY. Well, since I got to go first, I will yield back my time.

Ms. GRANGER. Thank you.

Mrs. ROBY. Thanks.

Thank you for your answers.

Ms. GRANGER. We will move to the other side.

Mr. Ryan.

DIRECTED-ENERGY WEAPONS

Mr. RYAN. The trend continues here, I guess. Thank you, Madam Chair. And I appreciate this hearing, and thank you for your time and your leadership.

One of the vulnerabilities we have with our Navy and other navies is the small seaborne and airborne threats. And this includes remote-controlled boats and drones that might pass unnoticed by traditional radar technologies.

And as we work to stay ahead, as we talk about the great-power competition, ahead of China, ahead of Russia, militarily, we have to be focused on the newer technologies. So I want to ask you about the directed-energy weapons that could give our Navy the capabilities that we need to apply the right amount of force to the right type of threat.

And we know that the DE weapons can take the place of multi-million-dollar missiles, which we are interested in on this end, as far as helping us keep the budget contained as to where we think it needs to be.

So I will just ask a couple questions and let you all touch on it wherever you can. What is the Navy's broader strategy for directed energy, and how are we addressing the growing threat? And, then, do you view the directed energy as a necessary part of the Navy's future offensive and defensive needs?

Admiral RICHARDSON. Sir, I will take that. I will be happy to take that question.

We have in the Navy an accelerated acquisition program comprised of some designated capabilities that we want to move to the fleet as fast as possible. And inside that, there are very few programs, but one of those involves directed energy, both high-powered microwave but more specifically in the laser regime.

And so we are moving forward with a family of lasers to get those to sea for exactly the reasons that you state. They are absolutely fundamental to allowing us to address some of these small threats—small boats, small aircraft, unmanned aircraft—but, also, as the technology is allowing us to really address some very high-end threats—antiship cruise missiles and those types of threats.

Furthermore, they can be used as a counter-ISR type of a thing, a dazzler. And so, depending upon the energy that you are employing, they can be used across the full spectrum.

Finally, they get you on the right side of the cost curve in terms of dollars per shot instead of millions of dollars per shot.

So we are accelerating this as fast as we can. We have some great progress. I would love to come and brief you on the whole portfolio. But by virtue of moving this into the accelerated acquisition program, we have achieved time scales, you know, compressing from 3 years to less than 1 year, in terms of moving some of these lasers through to production and testing.

And so I look forward to briefing you on this. It is an absolute high priority for us.

Mr. RYAN. Anyone else?

General Neller.

General NELLER. I would just say that it is just not at sea. I mean, there is a lot of activity if you—if we could talk in a classified setting, we could talk to you about what is going off the west coast of Yemen. There is kind of a live-fire laboratory down there with some of the threats that you describe.

But the same capabilities that we are going to need at sea we are going to need ashore. So the small UAS threat is something that we are—there is a lot of activity going on, from basic kinetic “shoot them down,” to try to break the link, to use a laser. And all the services are involved, and the Department is involved. The OSD is involved. Dr. Roper, I believe, is working for the Air Force, and his office, the Strategic Capabilities Office, is working a lot of this stuff.

So there is, as the CNO says, a lot of activity, and it is going to start to funnel down as we get to where we have to pick this. But I think for the naval force, mounting these capabilities on ships, I think, fairly soon, we are going to be able to see what their impact is. Because, clearly, our adversaries, to include violent extremist organizations, have taken advantage of very cheap, off-the-shelf technology that gives them an advantage that right now we are still—we have a capability to contest it, but the DE stuff would really change the game for us.

Mr. RYAN. Great.

Admiral, I had a very good brief your team gave us.

And, Madam Chair, I would just encourage everybody in the committee to get that brief. It is, I think, a very important next step for us to continue to fund and take to the next level.

I yield back.

Mr. SPENCER. Congressman, if I could just—

Mr. RYAN. Sure.

Mr. SPENCER. Could I just add a footnote there? Because I think it is important for the whole committee to hear this.

Starting when Secretary Esper was the last one to land on the ground, but Secretary Esper, Wilson, and myself meet with great regularity now. And one of the things that we are actually doing—we had a meeting last week—was pooling our S&T projects. Because we realized that we were parallel-tracking many of the technologies we are talking about.

We are working with Mike Griffin, now that he is on board, and really seeing how we can align our resources in the most effective manner in order to tackle some of these issues at hand.

Mr. RYAN. Great. Thank you.

I yield back.

Ms. GRANGER. Thank you.

Mr. Diaz-Balart.

MAINTENANCE WORK AT PUBLIC SHIPYARDS

Mr. DIAZ-BALART. Thank you very much, Madam Chairwoman. Gentlemen, thank you.

And two questions, if I may throw them out there. First is that, no secret that our public shipyards are having problems in providing scheduled overhaul and maintenance. And that is going to continue for the foreseeable future. So we are optimistic, you know, that the fiscal year 2019 budget will be on track, and that is great, but I wonder if the public shipyards are prepared for the increases.

So does the Navy have a plan to correct the backlog and the overload of maintenance work at our public shipyards, obviously, to get more hulls operational?

INDUSTRIAL BASE

And then the other one is that—no secret there either, that the industrial base has continued to express concerns about the feast-and-famine cycle of skilled labor at shipyards. And so, obviously, that is problematic as the shipyards are leading up to multiple new projects in the next decade, like, whether it is the Columbia-class sub or the Ford aircraft carrier.

So the public shipyards, as you all know, have similar issues with an unexperienced, new labor force. And the second question: Is there any consideration of using our capable private shipyards in a greater capacity to offset some of these maintenance and workforce issues, which potentially could only increase?

Admiral RICHARDSON. Sir, I will take the first whack at that, and then the Secretary will come in behind me.

First, I think you have characterized that exactly right. The public shipyards are at capacity. We are growing in those public shipyards. We have done a lot to discipline our processes in the public shipyards. And that maintenance backlog is decreasing, particularly with our ballistic missile submarines and our carriers. Our attack submarines are coming into that discipline.

We are hiring in those public shipyards. And so we are doing everything we can.

We also recently issued our report on the public shipyards that the Nation needs, which is the complement to the 355-ship Navy the Nation Needs program as well. This requires an extensive 20-year plan to recapitalize those shipyards so that we can improve capacity, very much in the same way that some private-sector industries have retooled, remapped production lines, et cetera, to increase capacity.

With respect to the industrial base, we also signed out a shipbuilding plan that complements the Navy the Nation needs. And it talks exactly about this feast-and-famine cycle that you described, how we need to get out of this boom-and-bust approach to

business, where peaks and valleys—very, very hard for the work-force to accommodate that.

Finally, to get to your question, we are already moving to the private sector to help us with the overload in the public yards. I think we have moved four of our maintenance availabilities into the private sector. The private sector comes into the public yards to help us with capacity where that is appropriate.

And so there is a good dialogue in terms of how to manage that workload over this national treasure, which is the combination of the skilled shipbuilders and fitters in both the public and private sector.

Mr. SPENCER. I think, just to add to that, Congressman, the conversations that we have been having with industry are really starting to move the needle. As long as they see a signal that we are going to have the ability to put resources forward, they are more compelled, obviously, to put money into research, development, and enhancements.

It is just a punctuation on what the CNO just said. They are ready and willing, the private sector, to work with us on managing capacity and will keep the public shipyards, obviously, at the full capacity. But managing the workforce is going to be a challenge, but it is something that we are up and ready to do.

Mr. DIAZ-BALART. And so you foresee the private shipyards having, again, a larger role?

Mr. SPENCER. Yes.

Mr. DIAZ-BALART. All right.

Admiral RICHARDSON. Sir, let me just punctuate that too. The shipbuilding plan starts in 1955, right? And it projects 30 years forward. Since 1955, there have been 14 shipbuilders that have gotten out of the defense business, right? And so, you know, the industrial base that we talk about today, that you questioned us earlier, ma'am, it is not the industrial base that we had in 1955.

And so, given this signal to grow the Navy, preserving and managing this industrial base would be a key component to that.

Mr. DIAZ-BALART. Thank you, Madam Chairwoman.

Ms. GRANGER. Thank you.

Ms. Kaptur.

RECRUITMENT AND RETENTION

Ms. KAPTUR. Thank you, Madam Chair.

Welcome. Thank you so much for your service to our country and all those under your command.

Both General Neller and Admiral Richardson, in your testimony, you talked about, General Neller, three main priorities, manpower being one of them; and, Admiral Richardson, you talked about people and the young men and women under your command.

My question really goes to your assessment, based on everything you know through recruitment and retention, on the physical and mental well-being of those under your command and some of the challenges you are facing, both in recruitment and retention.

And, particularly, I was going to ask General Neller, the deployment-to-dwell ratio is, you say in your testimony, one to two now. The optimal ratio is one to three.

And you mention in your testimony some of the destructive behaviors that impact those who undergo the stress of military service. These include, of course, sexual assault, suicide, hazing, excessive alcohol consumption.

I learned this past week, to my great dismay, that the Naval Academy has had to expel 40 of their cadets for drug trafficking and use. I can't tell you what an impact that had on me. I didn't read it in the newspaper. I wanted to verify if that is true or untrue and whether this is something new or this is something that the military has faced consistently.

And I would like to know, in terms of what you see in terms of recruitment across our country, some of the challenges you face with the ability to put together leaders who are mentally, morally, and physically fit.

General Neller, those are the words that you used.

Admiral RICHARDSON. Ma'am, if I could, before—I just want to address right upfront that I am not aware of any expulsion of 40 midshipmen for drug use. And so I am not sure where that information came from. We discussed it quickly—

Ms. KAPTUR. Yes, yesterday.

Admiral RICHARDSON [continuing]. I checked on it, and there is nothing. I mean, there is an investigation going on, but there have been no expulsions, and it is nowhere near that number, so—

Ms. KAPTUR. All right. Thank you.

General NELLER. So I think we are all aware that, you know, in the Nation, I mean, it is a strategic issue that less than 30 percent of the young men and women of our Nation are qualified just to join the military, either because of physical, mental, or moral issues.

So now we are down to 30 percent, and now we have to find those that have a propensity and are interested in doing this. And as there is some growth in the force, we are all out there competing in the same—looking for the same type of young men or women.

So, for your Marines, right now, you know, we are getting 99.7 high school grads. We have a delayed-entry pool of high school seniors that are waiting to graduate that comprises about 50 to 60 percent of those that we are going to assess and send to recruit training next year. I would—

Ms. KAPTUR. Is it easier, General, or harder to find individuals to—

General NELLER. It is always hard work. Our recruiters work really, really hard. And, you know, the retention of these folks and their completion of their first contract is something we track.

Our attrition numbers are down, not to the degree that I would like for every Marine. And once you earn that title, Marine, we expect there to be some attrition at entry-level training.

So they are really smart. They have a different expectation. They are digital natives. Social media and the things that happen on social media affect them in different ways. I am not a psychologist. But this is a really good Marine Corps. And I could tell you about the Marine Corps I joined in 1976, and I don't want to be in that Marine Corps. Not that there weren't good Marines, but I like this Marine Corps a lot better.

On retention, I was concerned about that last year, because for the first time we were really struggling to make our numbers, to keep folks, particularly in our senior enlisted. This year, we are on track to make it. So whatever happened—I think there was—you know, because we had an appropriation, then we had money for bonuses. Even with the economy being what it is, we are keeping enough qualified folks and some of the very best.

So there are some behaviors—I mean, I could show you the stats. I don't want to take up all the time. I will tell you, though, the one stat that consistently goes down: the number of people that are involved with the illegal drug use. That number continues to go down every year, which is good.

We do struggle, like all young people, we struggle with alcohol and certain behaviors. Because 62 percent of the Marine Corps is 25 years old or less. So we have the blessing and the curse of youth and all the good things that youth brings. And sometimes we are trying to make these young men and women grow up.

So we watch this. I am content with the force. We can always get better. But I think that you—I mean, as you have traveled around and seen them, I think everybody would be eminently proud of the young men and women that wear the uniform of any service in the United States military.

Ms. KAPTUR. Could I ask you—

Do you, in your budget, do you feel you have enough funds for behavioral specialists to deal with some of the challenges you may face, as special ops did with some of the challenges they faced?

General NELLER. We continue to look at that. And we continue to look at MARSOC as a—and there are probably some diagnostic cognitive tools that we want to take a look at. I have to price those out. But I think there is enough money that we will be able to do that, and if I cannot, I will come back and let the committee know.

Ms. KAPTUR. Thank you.

Ms. GRANGER. Thank you.

Judge Carter.

NUCLEAR POSTURE REVIEW (NPR)

Mr. CARTER. I thank you, Madam Chairwoman.

Welcome, each and every one of you. I appreciate you being here.

We learned about the—pardon my voice. I was checking votes till late last night. The NPR, Nuclear Posture Review, came up with some recommendations, one of which is that we put low-yield warheads on submarine-launched ballistic missiles, SLBM, along with sea-launched cruise missiles, SLCM variant.

Secretary Spencer, how does your budget address the recommendations from the NPR to develop low-yield nuclear weapons? And when can we expect these capabilities to be added to the Navy?

Mr. SPENCER. Congressman, as you know, it is a new initiative, and we are just getting started, to be very frank with you. To give you an answer right now as to calendar dates, I am not prepared, but more than happy to address it when we have it in the sights and come and brief you.

Mr. CARTER. And you will let us know when it is going to be reflected in your budget? Because we have been given a directive that is very important to our country.

Mr. SPENCER. Most definitely.

Mr. CARTER. Also, on that very issue, how do you respond to claims that modifying the current delivery system, such as the SLBM, to carry a low-yield weapon decreases the nuclear threshold because adversaries might not be able to correctly identify a potential nuclear launch?

Mr. SPENCER. Gracious. To be very frank with you, I will come back to you on that. That is an excellent, pointed question that, at this point, I do not have an answer for.

I defer to the—

Admiral RICHARDSON. Sir, I will take a stab. I mean, this gets into some pretty big questions about deterrence theory and all those sorts of things. But, in general, what we are finding is that some of our adversaries are developing capabilities. And what you want in terms of that is to have, sort of, proportional responses so that it does have that deterrent effect that we are looking for. And I think that is the theory behind the recommendations in the NPR.

MODERNIZATION PRIORITIES OF THE MARINE CORPS

Mr. CARTER. Thank you.

General, I have a question. Can you briefly discuss the modernization priorities of the Marine Corps? Are there specific modernization requirements, such as the next-generation combat vehicle or tactical communication networks, where inter-service collaboration may be beneficial to developing new systems? We have currently ongoing the DOD-wide inter-service collaboration in many areas. I would like to hear your comments on that.

General NELLER. There are a number of areas we need to modernize in. Information warfare, which would include electronic warfare, is probably at the top of that. And we are getting after that by changing our higher headquarters at our three Corps-level headquarters, changing it from a headquarters group into an information group and developing electronic warfare capabilities.

So that is one area, which it also includes information and intel analysis, where we need to expand our capability in long-range precision fires, which I think gets at what was talked about earlier. And we have to improve our air defense, which is also tied to directed energy.

Command and control in a degraded environment. We have lived in a world, for the past—since 9/11, where we didn't have to worry about being contested in the communications area and that we thought we could—you didn't have to worry about moving our headquarters or masking our signature. I would say those days are gone.

And we always have to be able to be more lethal in the ground fight and the air fight.

So there are a whole lot of things going on, Congressman, that we are working on, but those are the priorities that are addressed in the budget. And aviation is a key part of that, but there is ground modernization.

So, you know, the dilemma we face and the committee faces with us is we have to sustain the force for the current deployment, we have to maintain legacy gear as we go out and do that, and we have to field and modernize the force and transition to the new equipment, all at the same time. And, you know, the new stuff is very capable, but it also is very expensive.

Mr. CARTER. Thank you.

I yield back.

Ms. GRANGER. Thank you.

Mr. Ruppersberger.

TORPEDO THREATS AND DEFENSES

Mr. RUPPERSBERGER. First thing, Marcy, I wanted—your question. I am on the board of the Naval Academy, and anytime we have incidents that you talked about, we get notified initially. We don't wait for a meeting. I think it is one of the finest institutions and boards I have served on. So, if there is anything there, we would know about it. I just wanted to verify that for Admiral Richardson.

Admiral Richardson, I am going to ask you this question. The last 2 years, I have been asking questions about torpedo defenses for our Navy.

In 2010, as a result of an urgent operational needs statement issued regarding torpedo threats to our Nation's high-value units, such as our aircraft carriers, in the Seventh Fleet area of responsibility, the Navy accelerated development and deployment of a Surface Ship Torpedo Defense program.

And just last month, Admiral Harris testified to the House Armed Services Committee on challenges in the Indo-Pacific region—Armed Services Committee in that region—stating that the torpedo threat, particularly from the Chinese and Russian submarines, has increased.

Now, it is my understanding there are three Navy offices involved in the surface ship torpedo program. However, looking at the fiscal year 2019 request, the Navy has effectively canceled the program, despite recent positive test results and milestone achievements.

And my questions are: First, which Navy office is ultimately responsible for developing and deploying this critical capability? And then secondly, what role has funding constraints in the Navy's fiscal year 2019 budget request for this program had in this? And is addressing this threat still a priority?

Admiral RICHARDSON. Sir, talking to a career submariner, so—

Mr. RUPPERSBERGER. Yeah, I know that.

Admiral RICHARDSON [continuing]. Completely in on the threat that the undersea domain brings and completely dedicated to mitigating that threat against our entire Navy, not just our high-value units.

And the way we do that is through a layered defense—a layered defense with global and theater sensors, both fixed, mobile, and deployable, and then through a mixture of aircraft and payload delivery platforms. We want to hold that threat out far away from any kind of a target. And then we have sort of an in-close strike group defense that can address those.

We have been putting investment into this anti-torpedo, sort of, very last bastion of defense, you know, this shipboard platform-level defense, for some time. And recent testing has shown that, particularly in ocean and prototypic environments, there is just too much of a false-alarm rate for the system to provide an effective contribution to that layered defense.

So we are sort of dialing down the investment in that program until the technology, the detection schemes, the signal-to-noise ratio, artificial intelligence, whatever, may develop that will allow us to get to that system to a position where it really provides a contribution to that defense. And so we are watching that very closely.

Mr. RUPPERSBERGER. So are you saying the program is not being canceled but there are other alternatives? I mean, what is the conclusion to—

Admiral RICHARDSON. We have some systems deployed. As I said, we invested in that. And we are just finding that the performance of those systems is not living up to what our initial hopes were.

Mr. RUPPERSBERGER. Okay.

Admiral RICHARDSON. So we are just continuing to follow the technology very closely, investing proportionally with the capability.

And, boy, I will tell you, sir, that is a great thing. If it comes back and delivers reliable capability in prototypic environments, we will be in.

Mr. RUPPERSBERGER. And I also want to ask you—I don't think I am going to have the time.

Are we having a second round?

Ms. GRANGER. Yes.

Mr. RUPPERSBERGER [continuing]. About hypersonic and dealing with the same type of issue.

Admiral RICHARDSON. Yes, sir.

Ms. GRANGER. Mr. Calvert.

INNOVATIVE TECHNOLOGIES

Mr. CALVERT. Thank you, Chairman.

Secretary Spencer, Admiral Richardson, General Neller, thank you for being here. Thank you for your service to our country.

First, I want to be parochial for a moment and mention NAVSEA Corona, which is located in my congressional district. As you know, the small lab delivers big capability for the Navy through several mission areas, including performance assessment, readiness assessment, measurement calibration, system engineering. They are also rapidly growing in the live, virtual, constructive data analysis, directed-energy mission areas. I am proud of the work they do to support you and warfighters, so I just wanted to bring up that.

Secretary, Admiral, I have had the opportunity to talk to both of you about the importance of innovation. I think you are both here at a unique time and here at the right leadership to bring about change in the Navy in how we acquire and incorporate innovative technologies.

However, as history has taught us, bureaucracies outlast the best of us. As you know, bureaucracy favors the status quo, and there is little incentive for achieving efficiencies, incorporating disruptive technologies or methods, or deviating from incumbent providers.

I have no doubt you are committed to reforming how the Navy does business to better serve the warfighter and to have a more lethal force.

WORKFORCE MANAGEMENT

One of the priorities to accelerate capability—and the budget requests \$18.5 billion for that effort in research and development. A couple of questions.

The Navy budget document mentions workforce management. Can you please tell me how you plan on reforming the workforce and, importantly, changing the culture to be more adaptive and agile?

Mr. SPENCER. Congressman, you hit the nail on the head when it comes to being in the right place at the right time for innovation. I just want to comment on that first, because it starts at the top, coupled with urgency, because the two fit hand-in-hand, especially when we look at what our mission set is.

As we go forward, one of the battle cries that is permeating throughout the organization is innovation doesn't mean we have to sit here and bang your head against the wall thinking something new. Look above your silo, look out of your area of expertise, find some innovation, and what we call "R&D," rip it off and deploy it, and get it into the service as quickly as possible to the warfighters' hands. That is one of the primary themes that we are working now for innovation.

As far as workforce management goes, one of the greater assets that we were lucky enough to recruit is our head of acquisitions, as you know, Mr. Geurts, who has been at this for quite some time.

We really do have to spend the time, energy, and resources to bring our workforce around to the sense of urgency and give them the tools to actually explore and leverage the ability to, quote/unquote, "R&D" as I just explained it. It is going to be some new muscle movements for the organization. It is going to involve some new DNA. But I also think we can manage with what we have, to provide a leveragable return.

Mr. CALVERT. We all know that innovation rarely comes from big companies. How will you change acquisition practices to seek out innovators, typically midsize, small businesses? If innovation is disruptive to current practices and even may result in a PM savings on budget, how do you ensure that these innovators are not discarded to protect budgets?

Admiral RICHARDSON. Sir, I will tell you, I will just support the Secretary's comments on this and say that Secretary Geurts and I have already met, a couple of different venues, where we just are talking directly to small business. And we are listening as much as we are providing opportunities for them to join, listening to them tell us what our bureaucratic obstacles may be, where we can knock those down, how they can get better into the game, to have that agility and flexibility that you have described.

So we are very focused on small business and their role in innovation. I agree with the Secretary's comments that having the right people in the right place is absolutely essential to doing that. And with the combination of authorities that the Congress has already

given us, the focus on small business, and the tremendous opportunity, I think we will get at this.

Mr. CALVERT. Well, thank you.

And thank you for your answers.

And I just want to put a little shout out for NASSCO down in San Diego. Great little shipyard.

Thank you.

Mr. SPENCER. If I could also just put a punctuation mark, if I could, Ms. Chairwoman?

Ms. GRANGER. Sure.

Mr. SPENCER. A vignette for you, Congressman, is that we found—and this actually came up through NCIS—we found that there was a component manufacturer in our hypersonic experimentation that is a very small organization. And what I mean by small, it is four Ph.D.s, and the intellectual property goes home with the, quote/unquote, “CEO” on his laptop every night. And NCIS said this is too much of a threat and came down, as you might imagine, with the best intentions in the world as a big bureaucracy, to challenge this. And the little business owner said, I can’t afford this.

We are actually trying to adapt now and find a construct and a context that works to provide us the satisfaction it is protected and allows him to keep doing business without being suffocated.

Mr. CALVERT. Good. Thank you.

Ms. GRANGER. Ms. McCollum.

PILOTS—PSYCHOLOGICAL EPISODES

Ms. MCCOLLUM. As has been said earlier, thank you for your service and for those who serve under you.

I go to deployments. It is Reserve and National Guard. And most of us, I included, always say, “We wish for you a successful mission, we wish for you a speedy mission, and to come home safe.”

So I am going to ask some questions, and I know there will be followup in the office.

Ms. GRANGER. Ms. McCollum, can we just—your mike isn’t working. It is sort of—

Ms. MCCOLLUM. I am trying to do the best. I will use my substitute teacher voice. How is that?

I want to ask you about the concerns on this committee, and one of them is our pilots. Our pilots across the services are increasingly experiencing reports of psychological events, including hypoxia. And I know you will all agree with me, safety in flight is non-negotiable, but a recent NASA report on this issue shows that the Navy has more work to do.

I understand that the Navy has been making a strong effort to ensure any aircraft mechanical issues are fixed, but I remain concerned that we are not doing enough to focus on the pilots themselves.

The NASA report states, and I quote, “Events do not happen to planes; they happen to people.”

So can you give us an update on the Navy’s actions, team’s efforts, and how involved the Navy medical community has been in determining the potential causes? Can you describe the Navy’s co-ordination across services in solving this problem, particularly with

the Air Force, to ensure that we are leveraging solutions across the military?

SHIP COLLISIONS

I would also like to ask you about two concerns that were trending this year. First is a series of fatal ship collisions, including the USS Fitzgerald and the USS McCain; second, what appears to be an increasing trend in the Marine Corps in the number of aviation crashes and fatalities. In fact, Breaking Defense reported last year that the Marine aviation deaths were six times that of the Navy.

Now, obviously, both of these trends are concerning to everyone in this room, and that includes you gentlemen.

So, Admiral Richardson, now that the Navy's comprehensive review of ship collision is completed, how has the Navy changed training procedures to reflect what is found in this proper procedure? In your full testimony, there is some, but I would like more.

And, General Neller, are these crashes are a symptom of a readiness crisis, an issue with the airframes, or is it with something else? What is the Marine Corps doing to address these aviation failures?

In the time remaining, if you want to just touch on it. I know I haven't given you enough time remaining to get into it fully, so please brief me.

Admiral RICHARDSON. I will start, and I will address the physiological episode issue right up front, which, as you said, is a combination of system, you know, the aircraft, and also the person.

In fact, just last week, I was down at Oceana, and I visited both the repair facilities that are doing the system modifications to address, sort of, the system degradation and get at this, and also held a roundtable with 12 of the pilots who had experienced these physiological episodes to make sure that they are getting exactly what you say, you know, the proper medical care individually, and that we are approaching this as a system properly.

In fact, one of those aviators is my aide, Lieutenant Commander Danielle Thiriot, a strike fighter aviator, right behind me. She was part of that roundtable.

I think that a major part of this is it involves communication so that everybody knows exactly what is happening. We are moving together. We brought NASA on board. We brought on all of the private vendors—Boeing, Cobham, the manufacturers that are doing this. We are working very closely with the Air Force and the medical community to make sure that we are moving forward in as focused a way as possible.

With respect to the breathing gas issues that are resident in the training aircraft, the T-45, those efforts are paying off, and we are seeing a decrease in breathing gas issues in our training community.

With respect to the F-18s, those are mostly cockpit environment pressurizations. And while we are seeing some progress in those, we haven't really found a full smoking gun, but we have a number of material issues and upgrades that we are doing to address that problem; and then also, as I said, making sure that these aviators

get the full medical treatment and we are concentrating on them to learn everything we can about this phenomenon.

With respect to the Fitzgerald and McCain, I appeared and briefed this committee earlier. I thought that was very thorough. I will be happy to answer more thoroughly for the record. But suffice it to say that, since we last talked, we are moving out with alacrity in this area, both from an education and training standpoint. We have \$600 million in our budget to address increased simulators, both in the schools and in the fleet concentration areas, common bridge equipment across the surface force, all of these operator tools that both for training, education, and operations will help us get after this.

I am going to take a brief this afternoon on the modifications to the surface warfare officer career pattern, to include increased education opportunities and certification opportunities.

And so everything that we talked about before during the brief remains valid. Much of that has been accomplished, and what is not already accomplished is in full-speed development.

General NELLER. So I agree with everything the CNO said about the physiological, which is both the quality of the air and the pressurization of the cockpit.

Our numbers are a little bit different. For whatever reason, even flying the same model-type series, we haven't had the same number of incidents as the Navy. But we track it.

Certain things that we did: I will tell you that, before, if something within the—there are, like, 14 parts to the oxygen system of an aircraft, and we didn't fix it unless it failed. It was like, okay, you have to wait for it to break. Now, it is, okay, we are going to repair this part. And we had to do a better job of maintaining the system. So we gave pilots different sensors, we changed the altimeter—you know, we did everything.

And we listened to them. I think that is the most important thing, is when people were telling us, hey, we are having these issues, you know, we said, okay, let's talk about it. Now, it is part of the training regimen.

I mean, I am an infantry officer, but I spend a lot of time on aviation, and, obviously, we want everybody to be safe. And so I don't know if we will ever get to zero, because I think that is just part of the high risk of flying at high altitude, but, you know, we try to put everything in there. And the numbers are what they are, and I can give you all that data.

On the Class A, we had a horrible year last year. It was terrible. We had 12 Class A's. And part of the reason that we had some of the high casualties is we had one aircraft where we lost 16 people, a C-130. And so I think we know what happened in that case, and the families are in the process of being notified. I will tell you that, in almost all the cases, though, the material condition of the aircraft was not part of the event.

So what are we doing about it? This year, we have had one, and we have not had any fatalities. So I am very superstitious, and I would rather not talk about that anymore. So we are tracking, and we will see what happens.

We are flying a lot more, although there is no correlation between flight hours and these events. In some cases, there were some aircrew that didn't have enough hours.

But I think, whether it was a wake-up call or we are doing—I know we are doing a better job of paying attention, but we are flying more. The hours are going up. I think everybody is focused on this. And, you know, I am hopeful that we will be in a better place at the end of this year and we will not lose anybody.

I mean, it is one thing to lose an airplane—but it is not just the Class A's. I mean, Class A's are the ones that make the news, but we have to do better across the board. I mean, we end up damaging aircraft, certain things. Being at sea is a tough environment. You have to tow the aircraft, whether it be a helicopter or a tiltrotor. You have to get across the flight deck. You have to get it on the hangar bay. It is not a lot of space. You have really got to pay attention. So we have talked to commercial industry. We have had Delta come out and talk to us.

I would say one of the things we have done is we have increased the number of maintainers that go to our weapons training instructor course. Because we realize you just can't train the aircrew, you have to train the maintainers. And so now they are involved in this.

So, just like the CNO said, I mean, this is an enterprise effort to try to arrest these issues, because we need to keep all the planes that we have flying. And so we will continue to work on it, and we are not going to take our eye off it. It is not going to get fixed. It is something that, you know, you just kind of keep your eye on all the time. And whenever I talk to the commanders, we make sure that they understand that, you know, we have to be safe.

Ms. GRANGER. Thank you.
Chairman Rogers.

EUROPEAN DETERRENCE INITIATIVE (EDI)

Mr. ROGERS. Thank you for your service to your country.

One of the major policies of our government is ensuring that we are doing all we can to deter Russian aggression in Europe. Whether we are talking about kinetic operations in Georgia, Crimea, Ukraine, attempting to influence foreign elections, just recently boasting about their military capability and this so-called new missile that they crow about, it is clear that Russia is obviously seeking to re-exert itself as a global player.

I recently met with the Estonian Secretary of Defense, visiting also in Ukraine the same, as well as Georgia, all of whom are very much concerned, obviously, because they are impacted in a direct way in Russia efforts in Europe.

One of the primary means that we are responding to this aggression is through the European Deterrence Initiative, EDI.

Mr. ROGERS. In 2019, the lion's share of Navy and Marine Corps EDI is for theater antisubmarine warfare, P-8 airfield enhancement, multinational exercises, and prepositioning of Marine Corps equipment.

This question is for any or all of you, but can you describe your view of our efforts with EDI, or otherwise, encountering Russian aggression in Europe?

Mr. Secretary, would you lead off?

Mr. SPENCER. Certainly, Congressman.

Let me just emphasize, one of the first overseas trips I took was up to the Arctic conference. And we spent some time in Norway and listened to both the MOD and the CHOD in Norway talk about what is going on. Zapad had just finished the summer exercise in Russia, and it was a very eye-opening exercise for me, and I consider myself somewhat informed. Up in the Arctic Circle alone, you are seeing Russia repaving 12,000-foot runways, putting 10,000 Spetsnaz up above the Arctic Circle for search and rescue. Everyone is quite keyed up.

The EDI, as far as dollars and cents go, for the Navy and Marine Corps, is our contribution. Remember that we are the forward deployed force. The fact that we have our submarines, our surface ships, and our aviation assets already deployed and flying is meaningful. This is additive on top of that.

I defer to both the CNO and the Commandant to add on to that, but it is definitely a concerted, combined effort.

Admiral RICHARDSON. So I will take the next stab and then let the Commandant finish up.

But I will tell you that, as a major component of this resurgent Russia has been in their maritime, they have really never taken their eye off the development and deployment of their undersea forces, but they have really stepped on the gas and stepped that up, both in technology and in, sort of, the capacity, the amount of time that they are spending deployed.

That is exactly why our investments there are focused on the antisubmarine warfare problem, both enhancing our undersea sensors and then, as you pointed out, infrastructure for the antisubmarine aircraft, the P-8. As well, we are making more robust our facilities in Rota and some of the other Navy ports that we forward deploy to.

As well—and it is indicative of this global problem—the Navy-Marine Corps team, your naval forces, as the global maneuver force, is that we are spending a lot more time in the European theater. And so career strike groups, for instance, that would just transit through the Mediterranean at maximum speed to get to the Middle East are now spending much more time in the Mediterranean, not only contributing to operations in Inherent Resolve, et cetera, but also working the Russian presence problem in the Eastern Mediterranean, Black Sea, Baltic, et cetera.

So I think we are very focused on this, sir. We have flexed both from an investment standpoint and an operational standpoint.

General NELLER. We have had a Marine presence in Romania for many years. Special Purpose MAGTF that operates out of Moron, Spain, is a force that is available to both the Commander of AFRICOM and to EUCOM. We now have 300 Marines up in Norway, and although you would think 300 Marines are not a big deal, I am sure that Mr. Putin is well aware that they are there. Because we needed to get back in the cold-weather environment and take advantage of the gearset that we have there that we have started to rebuild.

So right now today, Congressman, we have Marines training in Sweden, with the Swedes and the Finns. There is an amphib ship

that just transited into the Black Sea that is going to do an exercise with the Romanians.

We continue to train a Georgian battalion that goes to Afghanistan. The Georgians have no marine corps, but we have been doing this for years, and, quite frankly, they like having the Marines there. And I was just there recently, and the United States agreed to sell them Javelin missiles for their own self-defense. And I think we are going to do the same with the Ukrainians, because we hear the same thing.

So that is not our area of strength. I mean, that is really a continental theater. And if you look at the National Defense Strategy, the Army is pretty much told to go there and do that. But we will continue to work that.

There are contingency plans that are being drawn up where there is a sufficient Marine and Navy capability that would be involved if Russia were to violate Article 5 of the Washington Treaty of the NATO Alliance. So we are there, not in the numbers that you might like or others might like, but within our capacity.

So I will tell you, this fall—and just close on this. We have done a lot of stuff—a lot of our allies in NATO have marine corps and amphibious capability: the Spanish, the Brits, the Greeks, the Italians. The Portuguese have a small capability.

So, this fall, in October, there will be a large NATO exercise, probably the largest amphibious naval exercise that has been held since the height of the Cold War. It is called Trident Juncture. There will be 45,000 NATO servicemembers and, you know, tens, if not dozens and dozens, of ships and aircraft that will be exercising off the coast of Norway against a simulated threat. And I am sure there will be demarches and other things by the Russian Federation.

But I think that is an indication of the seriousness that the strategy takes, that our NATO allies want to see us there and be committed to their defense.

Mr. ROGERS. Well, some of us are very much concerned about—as you are.

As part of the building-partnership-capacity category of EDI, you are only requesting \$3 million for multinational operations, compared to \$22 million for Air Force, \$56 million for Special Operations, \$21 million for the Army, \$200 million for security assistance to Ukraine.

So I would hope we would—Mr. Secretary, I would hope that we would put more weight on the EDI, particularly in the Ukraine, Georgia, and that world between Western Europe and Russia.

Ms. GRANGER. Thank you. That wasn't a question, right?

Mr. ROGERS. Right.

Ms. GRANGER. So I will call on Mr. Visclosky.

SMALL BUSINESSES

Mr. VISCLOSKY. Thank you.

Gentlemen, I have four or five questions. I will only ask two now, because we have colleagues and I don't know if we will go a second round.

Just an observation before I begin.

Secretary, I appreciate your interchange with Mr. Calvert about the four Ph.D.s. I never came close to getting one of those. But I appreciate the attentiveness to small-business people. My colleagues have heard me complain in the past that, while the Department has talked about fostering small businesses, I tend to doubt that they actually do it or have their heart in it.

I have used a firm in my district that does cybersecurity, a very small group, startup, with a couple of people. And the board of directors had to invest more than \$1 million in cash simply to qualify, to begin to bid on contracts they had no guarantee they were ever going to get. And I view that as a huge discouragement.

So I appreciate your comments and believe your sincerity, as well as your colleagues', in fostering that.

OPERATIONS AND MAINTENANCE ACCOUNT

General Neller, what I would ask about is your request in 2019 for an increase of a thousand troops. Absolutely believe you need that. But also note that, for 2019, there is a reduction in the request for operations and maintenance.

Could you explain, with additional troops, why you would have a reduction in the O&M account?

General NELLER. Congressman Visclosky, the thousand people—you know, there is always a bill out there that we never, ever reduce which we get from the operating force for what they call Table of Organization and Equipment Change Request. In other words, “Hey, I need more people to do this, and I can’t afford to give up other people.” So we are always trying to buy that down.

The Marine Corps force 2025 changes some of the capability sets that we need and some of the skill set we need. So those thousand people are already asked for in a number of different ways, whether they be cyber, more intel analysis, more security cooperation, ability people to do—advisers, different people here and there. Some are civilians.

So, on the O&M side, we have looked at what we do on the O&M side, on the green side, and, quite frankly, we have had enough money to do the training that we need to do. And so we were able to take some risk and able to move it to that other account to buy these individuals, and we felt that that was a better use of our money at that time.

So I think we felt that, if there was any risk, that risk was manageable. And that is why we did what we did.

ENVIRONMENTAL RESTORATION

Mr. VISCLOSKY. Okay.

The second question I would have is on environmental restoration. There are a number of compounds—PFOs, PFOAs. I couldn’t begin to pronounce the names of these compounds. But both the Navy and Air Force have identified areas beyond their bases where the groundwater has been contaminated. It is an issue Department-wide.

It is an issue in civil society as well. A number of us—Ms. Kaptur is ranking on Energy and Water; Chairman Frelinghuysen and I both serve on Energy and Water—we see it at the Department of Energy.

My sense is, every year, we invest in environmental restoration and cleanup, but I don't see the list getting smaller in any discernible way.

Given the fact that you have taken over, Mr. Secretary, is there a matrix you are going to use? Is there some way we could, if we are having a conversation a year from now—and I realize these are each unique, very difficult—some way to discernibly know that the moneys are ensuring progress here?

Mr. SPENCER. The bottom-line answer is, yes, Congressman, there will be. We can do that and we can produce that for you.

On the top of the wave, I will tell you, having been intimately involved with one major environmental impact program that is facing us out in Long Island, it is an ever-evolving issue. They are adding new chemical compounds to the list all the time.

But the bottom line is the Navy-Marine Corps team is everybody's neighbor where they are living, and we will hold up our responsibilities to make sure that we are correcting issues that we caused.

Mr. VISCOSKY. I would appreciate it if we could follow up, because both for our personnel, military and civilian, on those bases, around those, as well as civilians, we do have an obligation. And on the committee, it is not the first thing I think about when I get up in the morning, I have to admit that too, but I think it is very important.

Mr. SPENCER. Certainly.

Mr. VISCOSKY. Thank you.

Thank you, Madam Chair.

Ms. GRANGER. Thank you.

Mr. Cole.

NATIONAL STRATEGY

Mr. COLE. Thank you, Madam Chairman.

I am going to build on the question that Chairman Rogers asked. I would like you to give us—I want to ask two questions and then give you as much time as you want to respond.

First, since we have changed our national strategy to recognize we are in a new period of great-power competition, give us a quick description of the things that worry you most that the Russians and particularly the Chinese are doing now, the capabilities that they are developing that, both quantitatively and qualitatively, you are worried about.

And, second, I would also ask you that, in addition to what we are doing to counter that, how much are our allies doing to be helpful, particularly the Japanese in the Pacific and, obviously, the European powers in the Atlantic?

Mr. SPENCER. Let me provide the 30,000-foot view from the Department of the Navy, and then I will ask the Commandant and the CNO to step in.

But what keeps me up at night, there are two different organizations.

If I look at Russia, one of the things that keeps me up is their underwater capabilities. They never let up on that, as the CNO referred to earlier. I am still flummoxed by their economic model, to see where they are putting their resources, and is that, in fact, sus-

tainable when you look at the demographics of their society. But, nonetheless, in the immediacy, it does concern me.

When it comes to China, the bottom line there is the checkbook, to be very frank with you, not only in the dollars and cents that they are writing to support their military expansion and their technological R&D work, but what they are doing around the globe that I know that you all are aware of, which is weaponizing capital, to be very frank with you. Going into Sri Lanka, redoing the port, putting an interest rate—not as aid, but as a total secured loan with a pretty hefty coupon. Debtor fails on that, and the asset owner comes and reclaims it and says, “These are now ours.” They are doing that around the globe. And so their open checkbook keeps me up at night.

I would defer to both the CNO and the CMC as to their observations.

General NELLER. I kind of look at those like the near term and the long term. The Chinese are playing a long game. As the Secretary said, everywhere I go, they are there. They don’t have a list. And I am just—you know, their concern with human rights is not there. They have big bags of cash.

And if we have an issue with a host nation—I was just in Thailand, and, since the coup in 2014, they have not had a duly, democratically elected government. So, by law, I cannot have Thai officers attend our schools, which they have done for years and years and years and years. I met three Thai officers that I trained as a captain. They are now generals that lead their marine corps. So we don’t need a lost generation of Thai officers like we had a lost generation of Pakistanis and Indonesians, in my professional opinion.

So they are very clever. And they are in the Marianas. They are down in the Solomons. They are doing exactly what the Secretary said; they are going in and they are buying airfields and ports to extend their reach so that—they want to win without fighting.

The Russians, I think, are a little more in your face. I don’t think they want to fight us personally, but I think they want to be able to impose their will and use intimidation. I mean, they are capable. They have recapitalized their capability. I am not going to get into specifics, because that is really classified. But whether it be undersea, whether it be strategic weapons, whether it be their aviation, even their ground combat.

And I believe they have used the Syria operation as kind of a live-fire evaluation for their systems and for their military, to get them—because the one thing they don’t have, like the Chinese don’t have, that we have, is they don’t have 17 years of war to give you the experience. Although the war we would fight with them is a little bit different than what we have been fighting.

So we pay attention to it. You know, it is something we watch. And I think that is why we are here, and I think that is why the Congress has decided that the U.S. military, in order to compete against these so that we don’t have to go to war, we want to be in a position to negotiate from strength and make sure our State Department folks and the President of the United States can negotiate where we are not being held hostage by somebody’s capability.

Admiral RICHARDSON. Sir, if I could just close it up, I don’t have anything to add to the Secretary or the Commandant’s comments

on Russia and China and their capability, anything more. I would be happy to bring you a classified brief on both of those situations.

With respect to our allies, we continue—and I think the naval forces, in particular, continue—to partner with our allies. And some of those allies and partners can go to the pretty high end in naval warfare with us, and they have both the capacity, the capability, and the willingness to do that against some of these emerging threats. And we exercise with them routinely. You know, a lot of our exercises, while the funding may not be tagged for partner development, those exercises serve to do exactly that, as when we operate alongside our partners.

And then the spectrum unfolds, right? So you go from the very high end down to allies and partners that are challenged to secure their territorial seas. And we help them with maritime domain awareness and those sorts of things.

So there is a very coherent team approach. Our foreign investment strategy and our FMS programs are targeted towards that strategy. The important part is to enable interoperability.

With respect to what keeps me up at night, the highest priority I think I could offer for myself is a return to normal order on the domestic side that allows stable, adequate funding on a predictable basis, that allows us to address these threats at pace, at tempo, to stay in competition.

Mr. COLE. Thank you.

Thank you, Madam Chairman.

Ms. GRANGER. Chairman Frelinghuysen.

APPROPRIATIONS

Mr. FRELINGHUYSEN. Thank you very much.

Mr. Secretary, I thank you for your service as Secretary. I also thank you for your service as a Marine. We know Marines never retire.

Let me say, I have some rhetorical questions, but this is the House Appropriations Committee, and once we get our bill passed for 2018, you are going to have a lot of money to deal with. And this is a rhetorical question, but perhaps you want to—how are you going to spend it in the time that you have between now and October 1st?

Let me ask a few other questions.

And will you be using some of this money to deal with the coming strike fighter and submarine mission shortfalls? And apropos of Mr. Diaz-Balart, how quickly can the Navy reduce its depot maintenance backlog? These are the type of questions that I think deserve some responses.

And may I say, apropos of the comments relative to what China is doing in the South China Sea in terms of denial, I mean, it is sort of parallel to what the Chinese are doing with One Belt, One Road. They are in a commanding position.

And we have talked about it. Numbers matter, the size of the fleet. I mean, what are shipbuilding's prospects as a result of this influx of money for 2018, which will hopefully be done shortly, and the 2019 funds, which go up to \$716 billion to be shared by all the services?

Mr. SPENCER. Mr. Chairman, excellent question and front of mind.

If I was to relay to you how I approach the Secretary of the Navy's position in Title 10, it is running a business. We are now coming out of a period of doing more with less, and we have been in the backward crouch, so to speak, in that regard. We now have the resources to stop analyzing the threat and be the threat. But that is going to take some new muscle movements, and we are going to have to really make sure that we are on game for this.

We are putting the tools in place to monitor how we are going to put the resources out. In my weekly meetings with FMC, we are monitoring what we are doing now on the CR curve. And we will step up into 2018 when the bill is approved, ready to step to 2019.

We would ask—and I totally understand the role of the Appropriations Committee, and I understand the control, which is warranted. I would ask if we could find any relief in—

Mr. FRELINGHUYSEN. Well, we are addressing the whole issue of flexibility.

Mr. SPENCER. It would be greatly appreciated, sir.

Mr. FRELINGHUYSEN. Obviously, the committee has its interest in jurisdiction, and oversight is important. Sometimes when you get a huge bucket of money, people say, "Well, this is the gold mine." But the committee still, I know, under Ms. Granger's chairmanship, wants to make sure that all of those dollars are spent responsibly. So I think we have worked out a path forward to provide that degree of flexible you and the other services are looking for.

Mr. SPENCER. Outstanding. We welcome that with open arms. We will not do any sort of, quote/unquote, "foolish spending." We can't afford to.

I will tell you that we have programs racked and stacked. We have our contracting people already gearing up, because it is going to be a task. But we will come before you when, in fact, we see some difficulties to see if we can make you completely aware and transparent of where we stand.

Admiral RICHARDSON. Sir, if I could just add, you asked how were we going to spend the money. I would say from a top-level perspective, we are going to spend the money responsibly, we are going to spend the money in a way that is completely auditible, and we are going to spend the money in a way that is fully transparent and cognizant of the oversight responsibilities of this committee.

And so, while you have given us great resources, we pledge—

Mr. FRELINGHUYSEN. We weren't happy about—none of us here—about the series of continuing resolutions. We know that does terrible things to the services, and it is an embarrassment to the appropriations process, that we had to go through this. I won't say, you know, we weren't part of the problem, but sometimes you can blame the higher-ups or you can blame the other body, but it was inexcusable that we went through this process.

But now you have, I think, some degree of stability for a couple of years, and—

Admiral RICHARDSON. There is no doubt about it. The request for additional appropriations in 2017 stopped the bleeding, got us onto

a path of health. 2018 and 2019, those figures absolutely will do a tremendous amount to cure that.

With respect to the industrial base, which you touched on in your question, the numbers do count. We are at 282 ships in the battle fleet. By 2023, we will be at 326. And so we are building ships. We are building ships in a balanced way that not only builds the platform but builds the weapons, builds the system, the people, the infrastructure, the whole, you know, naval-power enchilada to make sure that we deliver naval power and capability.

Also, as we talked about earlier, investing into the industrial base, both the shipbuilders and the ship maintainers, on the public and private side.

Finally, we are fully funding our readiness accounts. And so, whether that is in ship maintenance, aircraft maintenance, whether that is parts, whether that is flying hours, steaming hours, all of that.

And if we run into issues with executability, we will be back here first to make sure that we identify that to you, and we will have a solution for where we can spend that money to great effect.

Ms. GRANGER. Thank you.

Mr. FRELINGHUYSEN. Thank you.

Thank you, Madam Chair.

Ms. GRANGER. Following up, I would remind you that I think you still have a goal of reaching 355 ships by the mid-2050s. I had the great opportunity of visiting some of the shipbuilders, and they were very concerned that they don't have the workforce. It is generational. Many times, it is families. And so keeping up with that will be very important.

We are going to have a very quick second round. If you can, limit it to one question that can be asked quickly. And we are going to start with Mr. Ryan.

RAILGUN SYSTEM

Mr. RYAN. Thank you, Madam Chair.

Briefly, I have a question on the railgun, again, talking about a technology, a railgun system for our U.S. ships. My understanding is these weapons can fire projectiles at extremely high speeds with a range exceeding 100 miles once fully operational.

I know China has demonstrated a capability for shipboard railguns. And, you know, I am just concerned, again, that we are maybe falling short here. Can you give us an update on what we are doing to increase the rate of fire?

Admiral RICHARDSON. Fully invested in railgun. We continue to test it. We have demonstrated it at lower firing rates and smaller ranges, shorter ranges. Now, we have to do the engineering to sort of crank it up and get it at the designated firing rates at the 80- to 100-mile range that you describe.

That involves a number of technologies. The barrel itself is probably the limiting case, the engineering on that; the materials required to sustain that power pulse, and the heat and pressure that is involved in launching those projectiles, and we are doubling down on that. But, also, sir, as you know, you know about directed-energy types of capabilities. The power system to generate that

power pulse is another thing. And then integrating it into ships the size of a destroyer is the final piece.

We are very conscious of the recent reports about Chinese progress in that area, following that very closely.

It has a benefit too—of the program, the railgun program. We have developed a projectile, high-velocity projectile, which is actually usable across the fleet in a number of different applications, not only in the railgun. And so it is a very fruitful program that we continue to invest in.

Mr. SPENCER. And, Congressman, since both of your questions were technology-oriented, let me say that, when it comes to the secretariat level, running the R&D enterprise under the thesis of portfolio management, we are linking that to the NDS implementation. And, while classified, I can tell you we are aligned in where we are putting our dollars. In the two buckets that you spoke about, there is alignment there. And we are focusing where our dollars are going in a much more keen fashion in portfolio management.

Mr. RYAN. Great. Thank you. Well, given your background, we are counting on you to make this happen. Thank you.

I yield back.

Ms. GRANGER. Thank you.

Mrs. Roby.

JOINT STRIKE FIGHTER

Mrs. ROBY. Thank you, Madam Chairman.

Just real quickly, as the chairman stated, numbers matter. Words matter too. So I just want to clarify for the record that, as it relates to LCS, the issues that I was specifically referring to are those that have been created due to a lack of predictability in funding, specifically, as I have referenced and you have heard others of our colleagues talk about, as it relates to the industrial base. And that has been said several times.

So, just real quickly, Admiral Richardson, as the President's national security strategy is laid out, the U.S. military and associated policies are increasingly focusing on our near-peer threats. These near-peer threats are also proliferating offensive and defensive systems to places such as Syria, making operations in the Middle East with the fourth-generation aircraft much more challenging.

And so, with the F-35 fifth-generation capabilities, talk to us about how it will help the Navy fleet in whole being more lethal, survivable, and capable.

Admiral RICHARDSON. I am happy to do that, ma'am. And I know that the Commandant wants to talk about Joint Strike Fighter as well.

I will tell you, they call it a different generation because that is exactly what it is. And the early flight demonstrations show that it is delivering on the capability, in terms of its sensor suite, its ability to process information on board, its stealth capability, all of that. It really brings us to a new regime in terms of aviation capability.

We are generating that capability in the Navy with the F-35C, as you know. We have the squadron out of Lemoore. We are making steady progress towards IOC in 2021. We are looking to do the

first deployment on an aircraft carrier. And so we are marching down there.

The Marines are sort of the early adopters here, and so if I could just turn it over to General Neller to provide some more.

General NELLER. We have our first prep for deployment undergoing in the Pacific right now. You may have seen pictures in the paper of the F-35B landing on an LHD. There will be another ARG/MEU, Amphibious Ready Group/Marine Expeditionary Unit, deploying off the West Coast later this year with the same ship.

And we are also working with our U.K. allies on possibly deploying with them. So, other allies: The Norwegians have a couple planes. The Israelis have a couple planes. The Italians are training up. Others are looking. There is a large consortium.

So, as the CNO stated, without getting into the details, the airplane has capabilities that we expected it to have. There are other things about the airplane that we are still figuring out. And we decided to go early because we didn't buy Hornet E and F, and we needed to replace the old iron we had.

So we are going to learn. Capability-wise, though, it is doing what it says it does. Talking to the aircrew, they can do things they couldn't do with other aircraft.

The concern you expressed about what is going on in the Middle East with certain air defense systems, I would rather talk to you about that in a private setting.

But we will learn, and we will find out. And that is why I will be anxious to see when the—because the MEU going off the West Coast this fall is going to the Middle East. So I am sure there will be an interesting welcoming party for them when they get there.

Mr. SPENCER. Congressman, I would be remiss if I didn't bring up the fact that we still have quite a bit of work to do with the F-35 when it comes to cost control and what we expect out of it. It is a major focus of the whole Department of Defense, i.e., because the Air Force, the Navy, and the Marine Corps are all in on the A's, B's, and C's.

It is front and center in my window as to how we are going to purchase this effectively, efficiently, and how we are going to sustain it. And we are working with industry and having some very sober conversations on where we are going on price.

Mrs. ROBY. Thank you.

And thank you all for your service and that of your families as well.

Thank you.

Ms. GRANGER. Thank you.

Ms. Kaptur.

NUCLEAR POSTURE REVIEW

Ms. KAPTUR. Thank you, Madam Chair.

I wanted to ask Admiral Richardson, the new Nuclear Posture Review has been characterized by some as a very large shift in our country's nuclear posture. And I am interested in your comments on its potential impact on deterrence, particularly related to the additional funding you are seeking for the new sea-launched cruise missile, which some say sounds like the old nuclear-tipped Tomahawk that was retired in 2010, and then also on the proposed new

submarine-launched ballistic missile that is planned to be a modified version, we think, of the W76, which is presently being modified.

So what do you think the impact on deterrence will be? And do you agree with the characterization that this is a major shift in our nuclear posture?

Admiral RICHARDSON. I think that it is a shift in the nuclear posture. It provides a broader range of deterrent options to national decisionmakers.

And with respect to the programmatic, we are just getting started, as the Secretary said. We will probably be able to address the low-yield warhead sooner than we will the sea-launched cruise missile. We really have to bring that program back from scratch.

So we have started to formulate our thinking in those areas and are moving out briskly to fulfill the new tenets of the Nuclear Posture Review.

Ms. KAPTUR. And what potential impact do you think it will have on deterrence?

Admiral RICHARDSON. I think it will enhance deterrence.

Ms. KAPTUR. Thank you.

Ms. GRANGER. Mr. Diaz-Balart.

OFFICE OF COMMERCIAL AND ECONOMIC ACTIVITY

Mr. DIAZ-BALART. Thank you very much, Madam Chairwoman.

Actually, first, a comment, which is: Whenever we have these meetings, we always hear about the potential threat of China and Russia, and yet there seems, a lot of times, to be a disconnect between the political and particularly the commercial relationship with China and attitude versus the threat that they potentially have. And that is something that I think we need to really spend a little bit more time on one of these days.

And I know you probably won't be able to answer this now, but we have all seen Mr. Putin's presentation and the video of him, in essence, nuking Florida. And so it might be interesting to get, in potentially a classified brief, information as to how threatening this potentially new technology that the thug—or that Mr. Putin has been talking about.

I yield back, Madam Chairwoman.

Mr. SPENCER. I would just like to bring up one thing, Congressman. You hit the nail on the head on an issue that specifically the Navy and the Air Force is funding called OCEA, the Office of Commercial and Economic Activity. And it is specifically looking at the commercial intertwine of China and the United States.

Just the other week, we let a contract for Military Sealift Command, with a prime who I won't mention here. And as we drilled down, we found out that a joint venture partner of theirs was Huawei. Huawei is on the NSA list for "don't touch." We have stopped that contract. We have asked the prime for the governance documents of what the joint venture looks like.

This is the kind of attention we are going to have to have going forward.

Mr. DIAZ-BALART. And I appreciate that. And, again, we have to do more of that, but, also, I think in general, not dealing with the military, not even dealing with procurement, just in general. We

kind of assume that China is a, you know, trading partner like India, when, in fact, they are not.

So thank you, Madam Chairwoman.

Ms. GRANGER. Thank you.

Mr. Ruppersberger.

HYPersonic MISSILE DEVELOPMENT

Mr. RUPPERSBERGER. Yeah, I am going to get to the hypersonic, Admiral Richardson.

It appears we can't go a week without having conversations or news about a hypersonic missile development. President Putin, earlier this week, revealed a new Russian hypersonic missile that supposedly boasted some impressive capabilities. And the Department of Defense stated in, I think, 2010 that China has developed a hypersonic land-based antiship missile based on the DF-21—I don't know what that is—DF-21. It is no secret that these weapons could potentially threaten the Navy's largest power-projection platforms and our aircraft carriers.

My questions are: While I understand this is an unclassified setting, I believe that speaking publicly about the hypersonic threat is important. And can you share with the committee a general update on any progress that we have made in developing credible defense against hypersonic weapons?

And considering the threat that hypersonic weapons play, do you see the role of our aircraft carriers changing, specifically when it comes to operating in anti-access/area-denial environments?

Admiral RICHARDSON. Sir, thank you for the question.

I think there is a technological—a bit of a race going on, in terms of hypersonics. It is a tremendous capability. It reduces transit times of warheads from hours to minutes. And so there is a lot of attention being paid on that around the world, including here in the United States, where there is, I think, a recent renaissance in terms of getting after this with some dedicated focus. And that is across the Department.

With respect to defense against those types of capabilities, just as the capability is emerging, it is the chess game that manifests itself. And so we will be generating defenses and responses to that.

The aircraft carrier in an A2AD environment continues to be relevant. I will tell you that this is not just a one-sided thing either. This gets at classified levels very, very quickly, and so we will need to find the appropriate room to talk about that.

Mr. RUPPERSBERGER. And that is why I said that.

Admiral RICHARDSON. Right. But I can tell you that we have confidence that that carrier delivers decisive capabilities in some of the high-end conflicts, even in these environments, that we wouldn't want to go into combat without.

Mr. RUPPERSBERGER. Well, I suggest that this is a high priority, because it seems that is where the new weaponry is going, both with China and Russia.

Admiral RICHARDSON. The Department sees it the same way.

Mr. RUPPERSBERGER. And you see it the same way.

Mr. SPENCER. Congressman, just to add, too, when I talked earlier about what the three services are doing together on S&T, this is exactly in that area.

SEQUESTRATION

Mr. RUPPERSBERGER. And you are going to have some money now to deal with it.

Speaking of money, I know I have tried to ask this question for years, when we passed that terrible law, sequestration, and it really has done a lot to hurt our military. And almost every four-star who comes in this room—I mean, General Neller, you have said it before, and Admiral Richardson, how sequestration is doing so much to hurt us and weakens our military.

Now we have a 2-year hiatus, so to speak, and we are having some money come in. But I would suggest that all of our four-stars continue to put pressure on Congress and let the public know that sequestration makes us weaker and allows Russia and China to become stronger.

General NELLER. Will do, sir.

Ms. GRANGER. Thank you.

I have asked for a classified briefing on the most recent advances in China and Russia, and you will get a notice very quickly.

Judge Carter.

READY RELEVANT LEARNING

Mr. CARTER. I thank you, Madam Chairman.

When we talked about our shipwrecks we have had—the McCain, the Fitzgerald, and others—the answer we got in those hearings was: Sequestration has prevented us from being able to do adequate training, and, therefore, mistakes were made, commanders have been relieved, et cetera.

We talked about a big pot of money. It is coming your way. Tell me about enhanced training you have planned for incidents like this and making better sailors and Marines.

Mr. SPENCER. Let me provide the 30,000-foot view, if I can, Congressman.

Out of the accidents that happened over in the Seventh Fleet, you might remember we had the comprehensive review stood up by the CNO, and I stood up the strategic readiness review. The 90-plus-some recommendations are now being handled by our oversight committee. We are well along the way. I am looking at 14 different items here, which have some items that are already engaged in awareness and training, the way we handle equipment on the bridge.

And then we have my strategic review, which is dealing more with culture and structure and C2. We have a brief, the CNO and I are sitting down here on our C2 discussions here momentarily. We are also addressing the way forward for the career path of the surface warfare officer.

Specifically, when it comes to training, let me defer to the CNO.

Admiral RICHARDSON. Sir, the training enhancements really leverage what has been almost a renaissance in understanding how people learn. And you harness that along with the sum of the really high-end technologies—a lot like a game, but a game that teaches you rather than just a game. And we have found that these have tremendous impact, you know, orders-of-magnitude improvement in terms of getting people to learn how to do their job.

Some of this was already underway in a program that we call Ready Relevant Learning, where we harness these technologies, we package them in blocks, and deliver them right before time of need so that that they are most relevant there. And that whole program has been enhanced by what we have learned to the tune of about \$600 million over the 5-year defense program, to focus those specifically on the surface warfare challenges that we saw in the Pacific.

Ms. GRANGER. Thank you.
Mr. Visclosky.

BUY AMERICA PROVISIONS

Mr. VISCLOSKY. Thank you, Madam Chairman.

Secretary, there is a dance that administrations of both parties play with Congress on Buy American provisions in the Department of Defense. Every year, when the budget comes up, there are no provisions. Every year, when the budget is completed, there are five provisions, basically. I assume that will hold true for fiscal year 2018.

Also, there are no waivers to those pending that I am aware of. So I would simply make the observation that, should the Department feel at some point in the future that a waiver might be necessary from the Department's perspective, that, in the future, I would also hope that the Department looks at those requests as to how they could be avoided in the future, whether or not Congress would accede to it or not. My sense in the past is administrations—and, again, both parties—have just been gratuitous. "We are going to ask for it, and we don't care if the problem is ever fixed."

FACILITY SUSTAINMENT AND MODERNIZATION

The one question I would have, in conclusion here, though, is on facility sustainment and modernization. It is my understanding that, in the 2019 request, the Navy's request is under a model, as I am told, is at about 78 percent; the Marine Corps at about 80 percent.

For any of you on the panel, though, concerns you have as far as just your basic facilities that we should have a focus on?

Mr. SPENCER. I will start, Congressman. And I will back up real quickly on an earlier question.

One of the things that we are focusing on in the Department of the Navy, specifically on the acquisition side, is management of our supply chain. That is a key, critical enhancer for us, and it really hasn't been—a lot of light hasn't been shined on that. If we manage our supply chain correctly, we should be able to manage the situations like that.

Mr. VISCLOSKY. And I appreciate you saying that, because I was going to acknowledge, because a number of members have talked about that. And I do, again, believe people's sincerity on the panel of managing that industrial base. I am sorry for not saying that.

Mr. SPENCER. No, not at all. I just wanted—

General NELLER. On the facilities, sir, you know, I would say our facilities are probably as good as I have ever seen them, but that doesn't mean that we are 100 percent.

And one thing about building a new facility is, in a few years, you have to maintain it. And in order sometimes to build it, you have to tear things down. And that is not a cheap thing, because a lot of the old facilities have environmental issues and they have to be properly disposed of, et cetera.

So we are always accepting risk with facilities, because if we had to pay a bill or do something in the past, particularly under sequestration and a CR, the facilities and the training ranges and the things like that always, kind of—they were the first ones to take the hit. So we think we have found a balance here. You are never going to get all the new stuff as fast as you want, and you are never going to get all your facilities to be brand-new. But we watch that, because we have to maintain what we have.

And there are some things, quite frankly—there are some areas we end up spending money to maintain things, or people use things that would be better if we just tore them down and we didn't have to deal with them. And so that is all part of our overall plan to get our facilities right-sized.

BRAC

Mr. VISCOSKY. And, General, I might just mention that I think Congress is part of the problem. It would be my anticipation in the fiscal year 2018 bill we will have prohibition on even considering how to approach the issue of BRAC. I realize the political sensitivity. I am not completely naive. On the other hand, I think it is very foolish public policy not to study issues to gain knowledge to make an informed decision. And I think sometimes we forced these costs on you by not at least seeking knowledge as to what makes sense with the taxpayers' dollars and what you need to utilize for your efforts.

So thank you very much.

Thank you, Madam Chairman.

Ms. GRANGER. Mr. Cole.

GLOBAL MANEUVER FORCES

Mr. COLE. Thank you very much, Madam Chairman.

Just a quick question, Admiral Richardson. A couple years ago, the then-current Commander at PACOM was appearing before us, and I just asked him, what was your greatest concern? He said, my greatest concern was last year we went 135 days without a carrier in the Pacific over the course of a year, at different points in the year.

Do you envision any kind of gap like that going forward?

Admiral RICHARDSON. Sir, I think we will be putting more carrier strike groups to sea.

But where I am going with this, sir, is a bit of a shift. And it goes back towards this idea of naval forces as global maneuver forces. So I will tell you that, if in any particular spot I don't have a carrier, I am just not very long away from getting it there, right? And so it is just a matter of what are the warning signs that are associated with any crisis that may go up. And this is the really unique thing about your Navy-Marine Corps team, is that we are just a week or so away from being where we need to be. We are that dynamic.

And so, moving away from the thinking where it is a one or a zero, I am either there or I am not. It is really moving towards thinking, what is my tether to get there, and how does that compare to the strategic warning for that situation?

A little bit of a long answer to your question, sir, but I will tell you that, overall, the situation is improving.

General NELLER. I would just add, Congressman, I think the way—and to pile on with what the CNO said, I mean, the advantage that our maritime force has is we can change our position. We don't need host-nation approval. We don't need to go talk to anybody diplomatically. We use the sovereignty of the seas to move that force.

And we are looking now at a different posture of our force as we set the globe in a different way. And you are going to have fifth-generation aircraft on an amphib deck, which we never had before. So that is going to cause our adversaries to have to look at it in a different way.

So it is not a carrier. It is only going to be six airplanes. It is not a carrier air wing. But it is a capability. And then, when you combine that with other surface action groups and other things, and even land-based aircraft, I think we are going to put ourselves in a different posture and force our adversaries to look at us in a different way.

Mr. COLE. Thank you very much.

Thank you, Madam Chairman.

Ms. GRANGER. Chairman Frelinghuysen.

ALIS SYSTEM

Mr. FRELINGHUYSEN. The Navy should point with pride that Admiral Harris will soon be wearing an ambassadorial hat. We like to marry the power of diplomacy with the power that all of you represent.

I couldn't leave here without asking whether—the landing on the Wasp of the F-35, was the ALIS system deployed in that maneuver? Because this has been a focus and concern of mine.

General NELLER. Yes, Chairman. I mean, I know we have talked about that. And we are still working through that. I have not heard anything about—I mean, those are kind of the initial bounces to get the aircraft qualified to land there. I don't believe they deployed the whole squadron there.

I know that the squadron that sourced that aircraft operates out of Marine Corps Station Iwakuni, where also now the carrier air wing that supports the Japan-based carrier is moving down. They are working the ALIS system. And there are some things that are new as we work through that.

Although the real issue for part support there and supply support there has to do not solely with that but the fact that we are in a foreign country. And I would say, for example, I know that squadron deployed to Alaska for an exercise, and because they were in the United States and didn't have to deal with some customs issues, their support was probably a little bit better than it was, because we are in a host nation and we go through the rules and regulations there.

So we work that every day. In fact, we were at an event last night and saw some folks from that vendor, and we had a nice discussion about support. And, as the Secretary said, you know, I will say, having been in this office coming up on 3 years, having a DEPSECDEF and Ms. Lord and Mr. Spencer and other people that are involved in the business world, that has changed our discussion on how we see things. And I think it is going to make us much more cost-conscious and more cost-effective.

And, as the Secretary said, with all the people that provide capability, we are making sure that we get value for the dollars that the United States taxpayer spends on the gear that we are going to operate, which is very effective.

Mr. FRELINGHUYSEN. Well, please keep all of us posted on your work. I mean, obviously, it is the critical investment. And it has been around for a while. So sometimes when things have been around for a while, they have some vulnerabilities. So I am sure in your discussions those issues will be addressed.

Thank you, Madam Chairman.

Ms. GRANGER. Thank you.

For our last question, Ms. Kaptur has asked for a brief last question.

DRUG/OPIOD CRISIS

Ms. KAPTUR. Thank you, Madam Chair, very, very much.

I just wanted to raise awareness, though you may not view this as your major mission, obviously, but the issue of the drug/opioid/heroin crisis in our country is so extensive. Ohio now is the number-one State for deaths per capita. This is not just troubling, it is terrifying, what is going on.

And we don't have enough doctors in our country to meet the need. We certainly don't have enough advanced practices nurses in the area of neuropsychiatric care and substance abuse.

And within your departments, there may be a way for a shared defense-civilian medical program where we could help pay for the education of doctors that could then serve in the defense arena, our veterans hospitals, as well as the civilian sector.

I would ask you to consider how we might use your experience and training in past decades to create a program where we can attract enough people into this specialty to serve both in the medical arena in defense—I know Special Forces told me that they were having difficulty, you know, recruiting behavioral specialists. We just don't have them. We don't have enough of them.

And so there may be a program where, through your medical facilities and of the other departments, we could help to pay for the medical education of people, so we get people serving in the defense sector, and then they could rotate out perhaps for a few days in the civilian and serve both sides.

I don't know quite the exact answer. All I know is the problem. And so I just wanted to place it on the screen for you as an arena for, perhaps, additional inquiry inside your respective departments. Thank you.

Thank you, Madam Chair.

Mr. SPENCER. Congresswoman, just to comment there, what you will see coming out of the Strategic Readiness Review kind of fits

into where we will be coming before Congress for some nibbling around the edges on DOTMA. And it is specifically, whether it be cyber or the example you talked about, the ability for our gray matter to cycle back through the civilian sector, whether to become current or remain current or add value to the equation, and have that ability to come in and out of service.

So that is one of the things we are looking at. Duly noted, what you just said.

And the fact that you brought up the earlier comment about drugs in the service, the Commandant hit the nail on the head. It is an area we are focused on. We are going down on the ramp there. But I will tell you one thing, as the Secretary of the Navy: We have services to support and take care of people who have a drug problem. I have absolutely zero tolerance for anyone distributing drugs in our Navy, and they will be dealt with in that light.

Ms. KAPTUR. Thank you.

Ms. GRANGER. Thank you.

As we finish up, I would like to compliment you on the way you work as a team. It is very important that your outreach, and particularly in small business—how important that is, and your co-ordination with Secretary Mattis.

I want to thank our witnesses for testifying today, and the briefing of the subcommittee is adjourned.

[CLERK'S NOTE.—Questions submitted by Mr. Rogers and the answers thereto follow:]

CH-53K

Question. The Marine Corps' new CH-53K King Stallion helicopter will replace the aging CH-53E Super Stallion, using proven and mature technologies and will deliver more than three times the capability of its predecessor. The CH-53K is designed to improve aircraft, aircrew, and passenger survivability; increase reliability; and significantly reduce operating and maintenance costs. The CH-53K will be the most capable heavy lift helicopter in the world today, and should meet the Marine Corps' warfighting requirements in the 21st century. The complete Program of Record for the CH-53K is 200 aircraft.

Can you please describe the increase in capability that the K model CH-53 will provide the Marine Corps?

Answer. The CH-53K immediately provides 3 times the lift capability of its predecessor. It will be the only fully marinized, heavy-lift helicopter capable of transporting 100 percent of the vertical Marine Air-Ground Task Force (MAGTF) required to fulfill our role as "contact" and "blunt" layers per the National Defense Strategy (NDS). The King Stallion will be able to transport up to two armored High Mobility Multipurpose Wheeled Vehicles (HMMWVs), two HMMWV Expanded Capacity Vehicles (ECVs), or a Joint Light Tactical Vehicle (JLTV) out to 110 nautical miles (NM), enable the MAGTF to mass combat power, maneuver, and maintain resilient and agile logistics and maintenance while under persistent multi-domain attack.

Questions. If this production ramp was to increase even faster, and you were directed to procure additional aircraft in FY 2019, could you support that?

Answer. Yes, to a certain extent. Increasing the CH-53K ramp rate will allow the Marine Corps to transition its Marine Heavy Helicopter (HMH) squadrons to the CH-53K faster, but only up to a certain rate. The Marine Corps—and Sikorsky—could support two additional CH-53Ks (10 total) if they were included in the FY19 budget.

Question. Would this increased production ramp result in a better per-unit cost?

Answer. Any increase in aircraft ramp would impact the per unit cost in those specific years due to economic order of quantities and learning curve. If the ramp would continue to grow, a savings in Average Per Unit Cost (APUC) could be realized for procurement.

[CLERK'S NOTE.—End of questions submitted by Mr. Rogers. Questions submitted by Mr. Aderhold and the answers thereto follow:]

LCS WORKFORCE

Question. Secretary Spencer, I will not repeat the question from my friend and colleague, Martha Roby, but I also want to express concern about how having only one LCS ship in the FY19 budget affects our workforce. As you know, a highly skilled and experienced workforce cannot be restored overnight once that workforce dissipates due to layoffs. Could you have some of your staff meet with industry and report back to the Committee on how many months will be needed to restore this workforce back to full operability, after the layoffs that the FY19 budget request-level will cause?

Answer. There are four LCS planned for construction between FY 2018 [3] and FY 2019 [1] that are not yet on contract. These ships provide sufficient work across the two contractors that, when combined with the 13 LCS hulls that will still be under construction in FY 2019, provide for workforce stability and be competitive for the FFG(X) award in FY 2020. The Navy is confident that the FFG(X) ship-builder selected will be able to ramp up their workforce to meet the Navy's FFG(X) procurement profile.

NEW FORCE STRUCTURE ASSESSMENT

Question. Both the National Security Strategy and the National Defense Strategy highlight increased significance in the maritime domain. The 30 year shipbuilding plan offers a path to a 355 ship fleet in the 2050s—yet it follows a very similar Force Structure Assessment, or FSA, to the last one submitted by the Obama Administration in 2016.

The current LCS, and the follow-on frigate we are about to procure, offer an affordable option to be able to increase capacity across the globe, while taking the stress off of our bigger assets (the ships which have a larger role in our great power competition with Russia and China).

Can we expect a new FSA to reflect the new strategies laid out by this Administration, and will it include a role for small, surface combatant ships as described above?

Answer. A new Navy Force Structure Assessment (FSA) will account for National and Departmental strategic guidance to define the capability and capacity of the future Naval battle force. Small surface combatants, as part of the battle force, will be addressed in the new FSA.

IAMD INTEROPERABILITY IN AEGIS

Question. In the recently released 2018 National Defense Strategy for the United States, Secretary of Defense, James Mattis, said regarding “deepening interoperability:”

“Each ally and partner is unique. Combined forces able to act togethercoherently and effectively to achieve military objectives requires interoperability.”

Is there a need for better IAMD interoperability in AEGIS to improve fleet defense in small operational areas, particularly to counter large-scale, coordinated raids by our potential enemies?

Answer. Yes. The Navy continually strives to improve AEGIS interoperability as an urgent warfighting priority. The Strike Force Interoperability program and process, as an example, was expressly created for this purpose; it examines interoperability challenges within the Fleet and certifies ships as interoperable as a precondition before deployment. Similarly, the Navy AEGIS Speed-to-Capability (ASTOC) process takes advantage of the AEGIS Common Source Library and the open computing architecture design to pace emerging threats. These initiatives address the challenge of large-scale, coordinated raids by our potential enemies. As the number of partner nations possessing AEGIS combat systems continues to grow, the ASTOC process will enable them to pace the threat as well.

AEGIS FORCE-LEVEL INTEROPERABILITY

Question. As such [relating to the previous question on AEGIS interoperability], what is the plan for introducing that capability in the near term to support our sailors? Finally, would you consider an AEGIS Force-Level Interoperability definition

and analysis study to address maximum interoperability of AEGIS and related assets in a limited operating space?

Answer. The Navy AEGIS Speed-to-Capability (ASTOC) process in use today is designed to rapidly and affordably develop AEGIS interoperability and warfighting capability improvements and get them to the sailors in the Fleet quickly. Utilizing the ASTOC process, an AEGIS update to address an emerging threat or add an identified high-priority capability can be approved, developed, tested, certified, and fielded within a year.

The Chief of Naval Research has sponsored a number of force level resource management and interoperability studies and projects in the past. The Navy sees the value of maximum interoperability of our ships, aircraft, and submarines as a force multiplier. No further studies or legislation is required to speed this program up.

CONVENTIONAL PROMPT STRIKE/HYPersonic WEAPON

Question. The Navy has been assisting the Pentagon with the CPS, Conventional Prompt Strike, program. One possibility is to field a hypersonic weapon from a submarine. In each of the next five fiscal years, what dollar amount of Navy-budget funding (not OSD funding), separate and apart from the submarine development budget, is set aside for work specific to hypersonic weapon development; for example, is the development of a new booster motor being paid for by OSD funds entirely, or by Navy-budget funding (not OSD funding), separate and apart from the submarine development budget, have you set aside in past fiscal years for work specific to the development of a booster for the Navy's Hypersonic Weapon?

Answer. Starting in FY19, the Navy has programmed \$700M/FYDP for evaluating and integrating CPS on a number of candidate platforms. Beginning in FY20, OSD will transition \$906M/FYDP from the defense-wide account to Navy for CPS weapon development, bringing the total investment to \$1.6B/FYDP. At that point, the Navy will assume the lead for CPS efforts. In anticipation of FY20, the Navy and OSD have commenced initial CPS transition efforts, to include scoping the program, assigning a program manager, and early platform integration work.

[CLERK'S NOTE.—End of questions submitted by Mr. Aderholt.]

WEDNESDAY, MARCH 14, 2018.

**FISCAL YEAR 2019 UNITED STATES AIR FORCE BUDGET
OVERVIEW**

WITNESSES

**HON. HEATHER WILSON, SECRETARY OF THE AIR FORCE GENERAL
DAVID L. GOLDFEIN, CHIEF OF STAFF OF THE AIR FORCE**

OPENING STATEMENT OF CHAIRMAN GRANGER

Ms. GRANGER. The subcommittee will come to order. This morning, the subcommittee will continue our series of open defense posture and budget hearings with our military services. Today, we will hear from the Air Force leadership on their fiscal year 2019 budget request.

This is the second in our series of hearings with the military services on the fiscal year 2019 budget request. We know that the Air Force has pressing needs for modernization across the board, and the National Defense Strategy demands an even greater pace of innovation. The subcommittee is prepared to help the Air Force meet that challenge.

This is an open hearing, but if our witnesses would like to come back before the subcommittee in a different forum at some time to talk in more detail about the challenges the Air Force faces, please let us know.

Before I introduce our witnesses, I would like to recognize our ranking member, Mr. Visclosky, for any remarks he would like to make.

OPENING REMARKS OF MR. VISCLOSESKY

Mr. VISCLOSESKY. Chairwoman, thank you very much.

I appreciate the panel being here today, your service. I look forward to your testimony.

And, Madam Chairwoman, thank you for bringing us together today.

Ms. GRANGER. Thank you very much.

Allow me to introduce our witnesses, the Honorable Dr. Heather Wilson, Secretary of the Air Force; General David Goldfein, Chief of Staff of the Air Force.

Secretary Wilson is making her first formal appearance before the subcommittee.

Secretary Wilson, welcome.

Secretary Wilson is appearing alongside the chief of staff, General Goldfein. General, thank you for your being here today. We look forward to hearing your views. Please proceed with your opening remarks.

SUMMARY STATEMENT OF SECRETARY WILSON

Ms. WILSON. Madam Chairwoman, I would like to enter my full statement into the record and just summarize a few comments.

First of all, let me thank all of you for your work on the fiscal year 2018 Defense Appropriations bill. It makes a tremendous difference to the airmen whom we represent here today.

And thank you to the members of the committee who have met with the chief and I over the last 3 or 4 weeks to talk about individual concerns. We very much appreciate your openness to do so.

The Air Force budget proposal for fiscal year 2019 aligns with the National Defense Strategy. It recognizes that we face a more competitive and dangerous international security environment than we have faced in decades. We have returned to great power competition, and the central challenge to U.S. security and prosperity is one that we must meet.

I would say that, in this budget, there are really two bold moves: The first is accelerating defendable space. We need to deter, defend, and prevail against anyone who seeks to deny our ability to freely operate in space.

And you will notice in the defense budget for fiscal year 2019, over the 5-year defense plan, we have an 18 percent increase for space over the plan that we presented to you last year at this time. And last year's was an increase over the year before.

The second bold move that is included in our defense—proposed defense budget for the Air Force this year is the shift to multidomain operations. We are proposing to change the way we do command, control, and communications on the battlefield, a mission that we perform for the Joint Force and particularly for the ground forces.

So, while there are two bold moves, accelerating defendable space and the shift to multidomain operations, there is also one continuing effort, and that is to keep improving the readiness of the force to win any fight, any time. That is what you expect of your Air Force and of your Joint Force, and we are here to deliver.

With that, I would ask the chief to join in here.

SUMMARY STATEMENT OF GENERAL GOLDFEIN

General GOLDFEIN. Thanks, Madam Secretary.

Chairwoman Granger, Ranking Member Visclosky, distinguished members of the committee, it is an honor for Dr. Wilson and I to represent 670,000 airmen as we update you on the Air Force and our budget proposal for 2019.

As Dr. Wilson stated, this hearing comes at a time of increasing global uncertainty. The security landscape we face has become more competitive, complex, and dangerous. In air, in space, in cyberspace, potential adversaries are rapidly leveling the playing field.

As stated in the recently published National Defense Strategy, we face the reemergence of great power competition. And while we didn't seek this competition, let there be no doubt in this room and around the world, your airmen stand ready to defend the homeland, deter nuclear conflict through nuclear readiness, own the high ground in any military conflict with air and space superiority,

and project global vigilance, reach, and power with our joint teammates, allies, and our partners.

I saw it a few days ago in the faces of our defenders at Fort Bliss training side by side with their joint teammates as they prepare to deploy to CENTCOM and AFRICOM. We saw it in January, when Secretary Wilson and I walked with our airmen on the Korean Peninsula assessing our readiness and support of the Department of State-led pressure campaign.

In January of 2018, this year, airmen flew 253 sorties delivering lethal effects in the air-ground campaign that has delivered a punishing blow to ISIS in Iraq and Syria, as we simultaneously apply pressure to the Taliban across Afghanistan.

At the same time, our continuous bomber presence in Guam and the U.K. supported diplomacy in Korea and in NATO, as airlift and tankers flew 1,400 sorties, taking off and landing every 3 minutes, delivering 12 million pounds of fuel and tens of thousands of tons of cargo and personnel when and where it is needed.

We remain a global power because of global mobility. 89,000 total force airmen are deployed or forward stationed around the globe, representing a fifth of our Active Duty force. And here in the homeland, airmen executed space, nuclear, cyber, remotely piloted ISR missions 24/7, to include flying the GPS constellation used by billions worldwide every moment of every day.

Airmen participate in some way in every mission the Joint Force performs. We operate from below the surface in a remote missile silo to the outer reaches of space and everywhere in between. And we can do all of this only with the unwavering support of the American people and the leadership and support of Congress.

This Air Force budget request allows our Nation to confront today's threats and moves us toward the Air Force we need to face tomorrow's challenges. It builds on progress we will make in 2018 to restore the readiness of the force, increase lethality, and cost-effectively modernize.

But most important, as Dr. Wilson stated, we assured budget alignment with both the National Defense Strategy and the Nuclear Posture Review as both were being developed. And this budget supports the greatest treasure in our Nation's arsenal: our airmen and their families.

Madam Chairwoman, Ranking Member, distinguished members of the committee, thank you for your continued commitment to the force our Nation needs and deserves. And on behalf of our airmen, we stand ready to take your questions.

[The joint written statement of secretary Wilson and General Goldfein follows:]

United States Air Force

Presentation



Air Force Posture

Witness Statement of

The Honorable Dr. Heather Wilson
Secretary of the Air Force
General David L. Goldfein
Chief of Staff, U.S. Air Force

March 14, 2018

Not for publication until released by the House Appropriations Committee,
Subcommittee on Defense



BIOGRAPHY

UNITED STATES AIR FORCE

DR. HEATHER WILSON

Dr. Heather Wilson is the 24th Secretary of the Air Force and is responsible for the affairs of the Department of the Air Force, including the organizing, training and equipping and providing for the welfare of 660,000 active-duty, Guard, Reserve, and civilian forces as well as their families. She oversees the Air Force's annual budget of more than \$132 billion and directs strategy and policy development, risk management, weapons acquisition, technology investments and human resource management across a global enterprise.

Dr. Wilson has more than 35 years of professional experience in a range of leadership and management roles in the military, higher education, government and private industry. Before assuming her current position, Dr. Wilson was president of the South Dakota School of Mines & Technology, an engineering and science research university.



From 1998 to 2009, Dr. Wilson was a member of the U.S. House of Representatives, where she served on the House Armed Services Committee, the House Permanent Select Committee on Intelligence and the House Energy and Commerce Committee.

Before being elected to Congress, Dr. Wilson was a cabinet secretary in New Mexico's state government responsible for foster care, adoption, juvenile delinquency, children's mental health and early childhood education.

From 1989 to 1991, Dr. Wilson served on the National Security Council staff as director for defense policy and arms control for President George H.W. Bush during the fall of the Berlin Wall and the collapse of the Warsaw Pact.

From 1991 to 1995, and again from 2009 to 2013, Dr. Wilson was in the private sector. In 1991 she founded Keystone International, Inc., a company that did business development and program planning work for defense and scientific industry. She served as a senior advisor to several national laboratories on matters related to nuclear weapons, non-proliferation, arms control verification, intelligence and the defense industrial base. Dr. Wilson also served on the boards of two publicly traded corporations as well as numerous advisory and non-profit boards.

Air Force Posture

Dr. Wilson was an Air Force officer from 1982 to 1989. She graduated from the U.S. Air Force Academy in the third class to include women, and earned her master's and doctorate degrees as a Rhodes Scholar at Oxford University in England.

Dr. Wilson was a collegiate rower at Oxford and is an instrument-rated private pilot.

EDUCATION

1982 Bachelor of Science, United States Air Force Academy, Colorado Springs, Colo.

1984 Master of Philosophy, International Relations, Oxford University, England

1985 Doctorate of Philosophy, International Relations, Oxford University, England

CAREER CHRONOLOGY

1985 - 1987, Plans and Negotiations, Headquarters, 3rd Air Force, RAF Mildenhall, England

1987 - 1989, Office of Defense Plans, U.S. Mission to NATO, Brussels, Belgium

1989 - 1991, Director, Defense Policy and Arms Control, NSC Staff, Washington, D.C.

1991 - 1995, President, Keystone International, Inc., Albuquerque, N.M.

1995 - 1998, Secretary, New Mexico Children, Youth and Families Department, Santa Fe, N.M.

1998 - 2009, Member of Congress, First District, New Mexico, Washington, D.C.

2009 - 2013, President, Heather Wilson & Company, LLC, Albuquerque, N.M.

2011 - 2012, Candidate, U.S. Senate, N.M.

2013 - 2017, President, South Dakota School of Mines & Technology, Rapid City, S.D.

2017 - present, Secretary of the Air Force, Washington, D.C.

(Current as of May 2017)



BIOGRAPHY

UNITED STATES AIR FORCE

GENERAL DAVID L. GOLDFEIN

Gen. David L. Goldfein is Chief of Staff of the U.S. Air Force, Washington, D.C. As Chief, he serves as the senior uniformed Air Force officer responsible for the organization, training and equipping of 660,000 active-duty, Guard, Reserve and civilian forces serving in the United States and overseas. As a member of the Joint Chiefs of Staff, the general and other service chiefs function as military advisers to the Secretary of Defense, National Security Council and the President.

Prior to assuming his current position, General Goldfein was the Vice Chief of Staff of the U.S. Air Force, where he presided over the Air Staff and served as a member of the Joint Chiefs of Staff Requirements Oversight Council and Deputy Advisory Working Group. Before serving as the Vice Chief, General Goldfein was the Director, Joint Staff, the Pentagon, Washington, D.C.



General Goldfein received his commission from the U.S. Air Force Academy in 1983. He is a graduate of the U.S. Air Force Weapons School and is a command pilot with more than 4,200 flying hours in the T-37, T-38, F-16C/D, F-117A, MQ-9 and MC-12W. He has flown combat missions in operations Desert Shield, Desert Storm, Allied Force and Enduring Freedom.

EDUCATION

- 1983 Bachelor of Science degree in philosophy, U.S. Air Force Academy, Colorado Springs, Colo.
- 1986 Squadron Officer School, by correspondence
- 1987 Master's degree in business administration, Oklahoma City University, Okla.
- 1992 Fighter Weapons Instructor Course, Nellis AFB, Nev.
- 1995 Air Command and Staff College, Maxwell AFB, Ala.
- 1998 Air War College, by correspondence
- 2001 National Defense Fellowship, State Department Senior Seminar, Arlington, Va.

ASSIGNMENTS

1. October 1983 - October 1984, student, undergraduate pilot training, Sheppard AFB, Texas
2. October 1984 - February 1988, T-38 instructor pilot, 90th Flying Training Sq, Sheppard AFB, Texas

Air Force Posture

3. February 1988 - January 1992, F-16 instructor pilot and flight commander, 17th Tactical Fighter Squadron, Shaw AFB, S.C.
4. January 1992 - June 1992, student, USAF Fighter Weapons Instructor Course, Nellis AFB, Nev.
5. June 1992 - July 1994, squadron weapons officer and Chief, Wing Weapons and Tactics, 366th Composite Wing, Mountain Home AFB, Idaho
6. July 1994 - June 1995, student, Air Command and Staff College, Maxwell AFB, Ala.
7. June 1995 - May 1996, special assistant to the Commander, Allied Air Forces Southern Europe and 16th Air Force, Naples, Italy
8. May 1996 - August 1997, executive officer to the Commander, U.S. Air Forces in Europe, Ramstein Air Base, Germany
9. August 1997 - June 1998, operations officer, 555th Fighter Squadron, Aviano AB, Italy
10. June 1998 - July 2000, Commander, 555th Fighter Squadron, Aviano AB, Italy
11. July 2000 - June 2001, student, National Defense Fellow, State Department Senior Seminar, Arlington, Va.
12. July 2001 - July 2002, Deputy Division Chief, Combat Forces, Headquarters U.S. Air Force, Washington, D.C.
13. August 2002 - July 2004, Commander, 366th Operations Group, Mountain Home AFB, Idaho
14. July 2004 - June 2006, Commander, 52nd Fighter Wing, Spangdahlem AB, Germany
15. June 2006 - January 2008, Commander, 49th Fighter Wing, Holloman AFB, N.M.
16. January 2008 - August 2009, Deputy Director of Programs, Office of the Deputy Chief of Staff for Strategic Plans and Programs, Headquarters U.S. Air Force, Washington D.C.
17. August 2009 - August 2011, Director of Operations, Air Combat Command, Joint Base Langley-Eustis, Va.
18. August 2011 - July 2013, Commander, U.S. Air Forces Central Command, Southwest Asia
19. August 2013 - August 2015, Director, Joint Staff, the Pentagon, Washington, D.C.
20. August 2015 - July 2016, Vice Chief of Staff of the U.S. Air Force, Washington, D.C.
21. July 2016 - present, Chief of Staff of the U.S. Air Force, Washington, D.C.

SUMMARY OF JOINT ASSIGNMENTS

1. June 1995 - May 1996, special assistant to the Commander, Allied Air Forces Southern Europe and 16th Air Force, Naples, Italy, as a major
2. May 1996 - August 1997, executive officer to the Commander, Allied Air Forces Europe, Ramstein Air Base, Germany, as a major
3. August 2013 - August 2015, Director, Joint Staff, the Pentagon, Washington, D.C., as a lieutenant general

FLIGHT INFORMATION

Rating: command pilot

Flight hours: more than 4,200

Aircraft flown: T-37, T-38, F-16C/D, F-117A, MQ-9, and MC-12W

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MAJOR AWARDS AND DECORATIONS

Defense Distinguished Service Medal with oak leaf cluster
Legion of Merit with two oak leaf clusters
Distinguished Flying Cross with Valor device and oak leaf cluster
Meritorious Service Medal with two oak leaf clusters
Air Medal with silver and bronze oak leaf clusters
Aerial Achievement Medal with oak leaf cluster
Joint Service Commendation Medal
Air Force Commendation Medal with oak leaf cluster
Air Force Achievement Medal

PUBLICATIONS

"Sharing Success, Owning Failure: Preparing to Command in the Twenty-First Century Air Force," Air University Press, October 2001

EFFECTIVE DATES OF PROMOTION

Second Lieutenant June 1, 1983
First Lieutenant June 1, 1985
Captain June 1, 1987
Major Nov. 1, 1994
Lieutenant Colonel Jan. 1, 1998
Colonel April 1, 2001
Brigadier General Oct. 1, 2007
Major General July 3, 2010
Lieutenant General Aug. 3, 2011
General Aug. 17, 2015

(Current as of July 2016)

Air Force Posture

AIR FORCE POSTURE STATEMENT FISCAL YEAR 2019 PRESIDENT'S BUDGET REQUEST

STRATEGIC ENVIRONMENT

The United States now faces a more competitive and dangerous international security environment than we have seen in generations.

Great power competition has reemerged as the central challenge to U.S. prosperity and security. China is rapidly modernizing its military and seeks regional preeminence. Russia aims to restore its national prestige and has shown its willingness to use military force and coercion in Europe and the Middle East. North Korea uses the threat of nuclear weapons to secure the survival of the regime. Iran has been a source of instability in the Middle East through the sponsorship of terrorism and exploitation of internal conflict in the region. Violent extremist organizations rooted in the Middle East, North Africa, and South Asia create instability and threaten the U.S. homeland and our allies and partners.

With global trends and intensifying pressure from major challengers, our relative advantage in air and space is eroding in a number of critical areas. The projected mismatch between demand and available resources has widened. Any American weakness emboldens competitors to subvert the rules-based international order and challenge the alliance and partnership network that underpins it.

In accordance with the National Defense Strategy, the Air Force must build a more lethal and ready force, strengthen alliances and partnerships, and deliver greater, more affordable performance. The Air Force requires the right size and mix of agile capabilities to *compete, deter, and win* in this environment, brought to bear by Airmen steeped in the business of joint and combined warfare.

AIR AND SPACE POWER IN DEMAND

Air and space power is indispensable to every joint force operation. The Air Force's first responsibility is to integrate air and space capabilities across the domains—delivering unmatched global advantage as an equal member of the joint team. We must be ready to design and lead joint and combined operations in support of national objectives.

We have five core missions:

AIR AND SPACE SUPERIORITY ... freedom from attack and freedom to attack. Air and space superiority gives our military and coalition forces the freedom to operate. Accelerating the campaign to defeat ISIS, Airmen conducted more than 172,000 sorties and 98,000 precision air strikes last year—over 70% of the total in the campaign—to support Iraqi and partner forces in Syria and Iraq. In the NATO-led mission in Afghanistan, the Air Force executed a sustained air interdiction campaign of over 4,000 sorties to support Afghan partners, targeting Taliban so-called safe zones, command and control nodes, illicit revenue-generating ventures, and

Air Force Posture

logistical networks. In space, the Air Force operates 6 constellations and 12 satellite systems vital to national security that provide communications, command and control, missile warning, nuclear detonation detection, weather, and GPS for the world. In 2017, the Air Force supported 28 space launches from our facilities at Vandenberg and Cape Canaveral, a 40% increase from 2016. We are planning 45 launches in 2018, sending both national security payloads and an increasing number of commercial payloads into orbit.

GLOBAL STRIKE ... *any target, any time.* Airmen maintain the continuous alert of our missile forces. Last year, Airmen conducted 16,425 intercontinental ballistic missile alert tours and 248 missile convoys across 3 missile wings and 5 states. Our bombers flew 580 missions in the Indo-Pacific, strengthening security and stability in the region and reassuring our partners. Reinforcing NATO's eastern flank, American bombers flew 70 assurance and deterrence missions.

RAPID GLOBAL MOBILITY ... *delivery on demand.* In 2017, Airmen transported nearly 1 million personnel, the equivalent of moving the population of Montana, and delivered over 738 million pounds of warfighting equipment and humanitarian supplies, the weight of 82 U.S. Capitol Domes. Our tanker force extended joint power projection at intercontinental distances by passing more than 1 billion pounds of fuel in-flight, which could fill the Rose Bowl to the top, while aeromedical evacuation Airmen airlifted more than 5,000 patients to safety. Closer to home, Airmen delivered 13,600 short tons of relief supplies following the string of record-setting hurricanes, and helped combat multiple wild fires in the western United States.

INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (ISR) ... *global eyes and ears on adversaries.* Last year, the Air Force was tasked with nearly 25,000 ISR missions, collected 340,000 hours of full motion video, and produced 2.55 million intelligence products—which averages almost 5 products every minute that close intelligence gaps and support target analysis and development. Persistent ISR closely tied to precision weapons from the ground and air has been a linchpin element in the destruction of ISIS.

COMMAND AND CONTROL ... *right info, right person, right time.* Last year, our E4-B National Airborne Operations Center—the survivable mobile command center—conducted 53 alert tours and provided travel support to the Secretary of Defense. Our E-8C Joint Surveillance Target Attack Radar System flew over 5,000 hours, enabling a range of support for Combatant Commanders from command and control in the ISIS campaign to the interdiction of over 12,500 kilograms of illicit drugs before they entered our Nation's borders. The E-3 Airborne Warning and Control System was integral to coordinating search and rescue efforts during the 2017 hurricane season.

Increasingly, we are conducting these missions with allies and partners. The Air Force engaged in more than 85 exercises with international partners last year, including five focused on high-end combat. We furthered the international role of the F-35, training with partners in both Europe and South Korea, and began delivery of F-35s to Israel, Norway, and Italy. We concluded 42 International Arms Cooperation agreements worth \$2.95 billion, including a cost-sharing agreement that launched the ninth Wideband Global SATCOM satellite which enables

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international partners access to shared high-capacity global communications. In 2017, Foreign Military Sales expanded nearly three-fold from the year prior to \$22.7 billion. These sales strengthen the United States' position as the security cooperation partner of choice, and expand interoperable airpower.

STRATEGIC DIRECTION

The Air Force budget request of \$156.3 billion for Fiscal Year 2019 builds on the progress made in 2018 to restore the readiness of the force, increase lethality, and cost-effectively modernize. Sustaining these efforts requires predictable budgets at the requested funding levels.

In alignment with the National Defense Strategy, this budget prioritizes long-term competition with China and Russia.

This budget moves the Air Force in the direction of multi-domain operations. Future wars will be won by those who observe, orient, decide, and act faster than adversaries in an integrated way across domains—land, sea, air, space, and cyberspace.

The squadron remains the foundational fighting unit of the Air Force. The Air Force currently has 301 front line operational squadrons¹ to execute our core missions, supported by squadrons that directly enable the fight and provide reachback capability. Based on the new National Security Strategy, National Defense Strategy, and Nuclear Posture Review, the Air Force is in the process of determining how many squadrons we need to deliver the combat capability required to execute the new defense strategy.

CONTINUING EFFORTS

Some elements of this budget *continue* programs and strategies that are well established:

READINESS: Restoring readiness to win any fight, any time remains a primary objective. The budget funds 1.5 million flying hours—1.2 million executable peacetime training flying hours and 300,000 flying hours supporting overseas contingency operations—at a cost of \$8.7 billion. We propose to buy 54,443 preferred munitions to reverse previous declining inventories at a cost of \$1.8 billion. This budget also funds training ranges, simulators, instructors, and key infrastructure required to improve the quality of our training in alignment with the National Defense Strategy prioritization of peer competition.

PEOPLE: The FY19 budget proposal represents an increase in the size of the Air Force by 4,700 Airmen.² Our five-year plan calls for achievable, steady growth to approximately 339,000 active duty Airmen while we simultaneously review existing manning across the active duty, guard, and reserve components. In addition, this budget submission funds important support to Airmen and families with a 2.6% military pay raise, increased housing and subsistence

¹ Fighters, bombers, airlift, intelligence/surveillance/reconnaissance, command and control, special operations, space, cyber, missile, and personnel recovery squadrons are counted here.

² Total Force number including active duty, guard, and reserve.

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allowances, and family support programs. We will invest in purposeful development of Airmen to strengthen our joint warfighting excellence—integrating education, training, and experience for our leaders and teams.

NUCLEAR DETERRENCE: Our budget proposal supports the Defense Department's principal priority to maintain a safe, secure, and effective nuclear deterrent that safeguards the homeland, assures allies, and deters adversaries. The budget improves our nuclear command, control, and communication systems as directed in the Nuclear Posture Review. It initiates development of B-52 replacement engines, continues development of the Long Range Stand Off missile, and continues development of the replacement for the Minuteman III intercontinental ballistic missile.

MODERNIZATION: The budget funds our priority modernization initiatives with the purchase of 48 F-35 fighters, 15 KC-46 tankers, and continued development of the B-21 bomber. This year, we will decide the new T-X advanced trainer aircraft and the replacement for the UH-1 helicopter. Critical to mission success is continued investment in our classified portfolio, which will be briefed in a closed session.

CHANGES TO IMPLEMENT NATIONAL DEFENSE STRATEGY

Some elements of this budget reflect a *change* to confront the reemergence of great power competition:

SPACE SUPERIORITY: The FY19 budget represents a 33% increase from last year in the research, development, test, and experimentation budget for Air Force Space to meet the threat from China and Russia. We will build more jam-resistant GPS satellites, improve missile warning, improve space situational awareness, and increase our ability to defend our Nation's most vital assets on orbit. We are taking advantage of changes in legislative authorities to return program decision authorities back to the Air Force, including 14 of the 19 Major Defense Acquisition Programs within the space portfolio. Using tools such as the Defense Acquisition Workforce Development Fund, we are investing in our people, ensuring they have the right skills and training to succeed.

MULTI-DOMAIN COMMAND AND CONTROL: Technological advances are changing the character of warfare. The budget proposes to change the way we execute battlefield management command and control in the multi-domain environment. We propose to modernize 7 E-3 Airborne Warning and Control aircraft (AWACS) and keep the current E-8C Joint Surveillance Target Attack Radar System (JSTARS) operational through the mid-2020s, as we develop and transition to an advanced battle management system. This approach will integrate space, air, and ground based sensors on manned and unmanned platforms and satellites to meet more combatant commander requirements in both contested and non-contested environments.

AIR SUPERIORITY: Central to lethality is our ability to gain and maintain air superiority when and where needed against potential adversaries in 2030 and beyond. Over the next five years, we will develop an integrated family of systems that can establish and maintain air superiority in a

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contested environment. The FY19 budget includes \$11.0 billion as part of a \$63.8 billion effort over the five-year plan. This will be a multi-domain effort with a renewed emphasis on electronic warfare, networked capabilities, and control of the electromagnetic spectrum.

LIGHT ATTACK: Retaining irregular warfare as a core competency at a lower cost, and strengthening our alliances are key elements of our National Defense Strategy. The Air Force proposes to continue the light attack experiment, developing concepts of operation and further defining requirements in preparation for fielding a force of U.S. light attack aircraft during this five-year plan. We are focusing on rapid fielding and rapid procurement strategies that leverage existing capabilities with little or no development. Designed to be coalition at the core, we will invite and lead allies and partners to train in the U.S., buy common equipment for their own affordable light attack squadrons, and build those international squadrons on a network that shares information.

SCIENCE AND TECHNOLOGY: The Air Force launched a review of our science and technology strategy that will be complete later this year. This budget increases emphasis on basic and applied research to drive long-term innovation and dominance in air and space power.

BUDGET PRIORITIES

IMPROVING WARFIGHTING READINESS: Readiness is first and foremost about having enough trained people. We continue to address the aircrew shortage through a multi-pronged approach. This budget boosts pipeline capacity, expands pilot training and addresses experience shortfalls, continues incentive pay and bonuses, improves administrative support at the squadron level, and funds flying hours to executable levels. It also addresses gaps in space, nuclear, cyber, and intelligence career fields, and supports Battlefield Airmen, our air-to-ground integration force.

The budget proposal funds aircraft depot maintenance, parts, logistics support, and invests \$2.8 billion in operational training infrastructure needed for relevant, realistic training for the multi-domain environment. It fully funds preferred munitions to industry capacity. This includes Hellfire missiles, Joint Direct Attack Munition bombs, the Small Diameter Bomb, and the Advanced Precision Kill Weapon System.

The Air Force recruits Airmen, but we retain families. To improve family support, the budget funds expanded childcare hours, increases off-base child care support, and funds more respite care and support coordinators for special needs families. We are improving the assignment system so families can better plan for future assignments, sustaining our morale and resilience programs, and implementing initiatives that support unit cohesion in our squadrons.

The Air Force is also significantly changing the way we collect operational tempo metrics. Prior methods underreport how much time Airmen are away. By now accounting for temporary duties away from home station for training exercises or mission-related requirements in addition to deployment time, we more accurately capture the true impact of service demands on Airmen, families, and home units.

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SAFE, SECURE, AND EFFECTIVE NUCLEAR DETERRENT: Deterrence works if our adversaries know that we can hold at risk things they value. We must concurrently modernize the entire nuclear triad and the command and control systems that enable its effectiveness. The Air Force stewards two legs of the triad and operates 75% of the Defense Department's nuclear command, control, and communication (NC3) capabilities.

Modernizing the air-based leg of the nuclear triad, the budget continues development of the replacement air-launched cruise missile, which is 25 years past its design life and faces improving adversary air defense systems. This weapon will equip the B-52, B-2, and forthcoming B-21 bombers to maintain flexible and effective stand-off capability that can penetrate and survive the most challenging environments.

This budget continues to update the B-52 bomber fleet and funds development of replacement engines. With adequate sustainment and modernization, including new engines, the B-52 will remain a key part of the bomber enterprise well into the future. Additionally, the budget proposal begins to replace our Vietnam-era UH-1N helicopter.

The budget moves forward modernization of the ground-based leg of the nuclear triad. The Ground-Based Strategic Deterrent program will replace the retiring Minuteman III, which has remained viable four decades past its design life through a series of costly service life extensions, but cannot be extended further beyond 2030.

Today's nuclear command, control, and communications system was last comprehensively updated almost three decades ago. The budget targets investments to modernize the integrated land, air, and space-based systems to ensure secure, survivable connectivity with the President and national command leadership.

COST-EFFECTIVE MODERNIZATION: Underfunded in modernization for over a decade, the Air Force must manage a bow wave in modernization over the next ten years.

The budget proposes to upgrade F-16 and F-15 C/D aircraft to retain affordable capacity. We propose to buy 48 F-35A aircraft in FY19 and 258 F-35A aircraft over the next five years. The F-35A fighter brings unparalleled global precision attack capability. The Air Force will integrate the F-35 with fourth-generation aircraft as well as space and unmanned aircraft, to maintain air superiority in highly contested environments.

Tanker recapitalization remains a top acquisition priority. The multi-role KC-46 is capable of refueling joint and coalition aircraft with both boom and drogue in the same sortie, and augments the airlift fleet with improved cargo, passenger, and aeromedical evacuation capabilities. This budget proposes to buy 15 more KC-46 tankers in FY19.

Our budget proposal continues to develop the B-21 bomber as a key component to the joint portfolio of conventional and nuclear deep-strike capabilities. The B-21 will be able to deliver both gravity bombs and the Long Range Stand Off missile, ensuring options for our Nation's leaders to hold targets at risk around the world.

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MOVING FASTER TO DEFENDABLE SPACE: The FY19 budget accelerates our efforts to deter, defend, and prevail against anyone who seeks to deny our ability to freely operate in space. The budget recognizes that adversaries are developing the ability to deny our free use of space and includes capabilities to confront that threat. The development of these capabilities will continue over the future years defense plan and beyond.

Foregoing the continued buy of today's Space Based Infrared System satellites 7 and 8, the Air Force will develop the next-generation Overhead Persistent Infrared system. This system will detect and report on current, emerging, and anticipated threats, and will be designed for survivability.

The budget adds resilience features and user protection to the Advanced Extremely High Frequency and Wideband Global Satellite Communications systems, and continues to fund development of next-generation protected satellite communications services for both strategic and operational military users. We continue to explore more affordable and innovative ways to acquire satellite communications services with investment in both commercial industry and international partner capabilities.

The budget proposal increases funding for anti-jam, anti-spoof, and anti-tamper military GPS development and integration into multiple joint platforms, and continues to grow Space Situational Awareness and Space Control capabilities to enhance our ability to identify, characterize, and attribute threatening actions. The budget also funds a Weather Satellite Follow-on program using rapid acquisition authorities.

Building upon the foundational architecture for space warfighting, we will deliver highly responsive capabilities to connect tactical and operational systems to strategic-level decision makers. The recent stand-up of the National Space Defense Center supports this mission. The budget also funds the Standard Space Trainer that provides realistic, live, virtual, constructive training to prepare our Space Mission Force Airmen to prevail in a contested space domain.

NETWORKED BATTLE MANAGEMENT: Integrating capabilities that span all domains of warfare will be required for success in future combat. With the other Services, we are shifting from a model of interdependence to one of integration, which includes better integrated communications systems, development of tailorable units, and policies in key areas that enable adaptability and innovation. Concurrently, we will advance our command and control systems to reflect the changing character of warfare.

The Air Force capability that delivers persistent battle management command and control and ground moving target indications to joint warfighters is in high global demand that far exceeds supply. We currently conduct battlefield command and control from JSTARS, AWACS, Combined Air Operations Centers, Tactical Operations Centers, and mobile Command and Reporting Centers, and monitor many targets on the ground from JSTARS, Global Hawk, and other unmanned aerial systems. We had planned to recapitalize our aging fleet of E-8C JSTARS on a newer aircraft, however, we believe that system will not be viable in future contested environments and the recapitalization plan brought no additional capability or capacity to meet

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future demands despite over \$15 billion in total lifecycle costs. In developing an alternative approach that will meet more warfighter needs, we propose to keep the current E-8C JSTARS operational through mid-2020s and replace the recapitalization program as we transition to an advanced battle management system for the future. This approach, as directed in the National Defense Strategy, will network sensors from space, air, land, and sea, and fuse information to create a more comprehensive picture to support the joint fight, even in a contested environment.

STRENGTHENING ALLIANCES: The National Defense Strategy emphasizes the importance of alliances and partnerships. The FY19 budget reinforces the Air Force commitment to our allies and international partners through programs such as the European Deterrence Initiative and Indo-Pacific security initiatives.

REFORMING THE DEPARTMENT

While this budget proposes additional resources for the Air Force, we have to gain full value from every taxpayer dollar we spend. We will drive innovation, reinforce budget discipline and affordability, and deliver performance with the funds entrusted to us.

ZERO-BASED REVIEW: For the first time in more than two decades, we are conducting a zero-based review of all Air Force programs, budget accounts, and manpower authorizations to prepare for FY20 and the future years defense plan. We will examine the relevance of every requirement and program to align with the new defense strategy. Everything we do is “on the table” during this review.

HEADQUARTERS AIR FORCE STAFF REVIEW: Simultaneously, we are reviewing the structure and manning of the Headquarters Air Force staff. We are the smallest and most integrated of the service staffs and intend to stay that way. We will ensure each position is used efficiently and effectively to support the warfighter.

ACQUISITION: Enabled by the FY16 and FY17 National Defense Authorization Acts, we are streamlining Air Force acquisition. We have milestone decision authority for more programs and we are pushing authority to run programs down to lower levels and using new techniques to innovate, including rapid prototyping and experimentation. We appreciate Congress' continued support of the Acquisition Workforce Development fund and expedited hiring authorities to attract, recruit, hire, develop, and retain a high-quality workforce.

STREAMLINING: We are systematically reviewing, reducing, and clarifying onerous internal instructions, additional duties, and computer-based training. There are over 1,300 Air Force instructions that levy 85,000 requirements on our wings and squadrons. Every one of them will be reviewed, rescinded, or rewritten over a 24 month period. We will significantly reduce the number of Air Force publications and ensure the remaining ones are concise, current, and relevant. We have already rescinded over 100 Air Force Instructions. While this review reduces stifling bureaucracy and associated cost, the more important impact is on our ability to fight. This supports the culture of centralized intent and decentralized execution we need for

Air Force Posture

competent and entrusted Airmen to make decisions in future highly contested environments, where we cannot expect continuous centralized control.

AIR FORCE WARFIGHTING INTEGRATION CAPABILITY (AFWIC): The Air Force is implementing changes to program development that will better integrate the budget across the force and allow for more rapid change to meet emerging threats. This will improve force design analysis to support national defense priorities and improve our ability to engage in multi-domain operations.

REVITALIZING SQUADRONS: Squadrons are the warfighting core of our Air Force. We organize, train, and equip to deploy from the squadron up. By revitalizing our squadrons, we are reinforcing cohesive, ready, and agile fighting forces to defend our Nation's interests in the complex security environment. We depend on exceptional leaders to lead the world's most powerful Air Force and joint teams. We will develop future leaders, address cultural shifts to embrace 21st century talent management, and unlock the true potential of our Airmen.

AIR FORCE FISCAL YEAR 2019 PRESIDENT'S BUDGET AT A GLANCE

In accordance with the National Defense Strategy, the Air Force will focus on:

- Readiness...**being ready to win any fight, any time...starts with trained people
- Nuclear Deterrence...**modernize our two legs of the nuclear triad and the command and control systems for a safe, secure, effective deterrent
- Cost-Effective Modernization...**to manage the ten year bow wave
- Air and Space Superiority...**build integrated family of systems to superiority; accelerate efforts to operate freely in space
- Multi-Domain Command and Control...**to evolve in multi-domain
- Light Attack...**affordable air support designed to be coalition at the core
- Science and Technology...**drive long term innovation in air and space

	FY18 PB \$183.6B	FY19 PB \$194.2B	Air Force Controlled Budget Authority +\$156.3B
Pass thru	37.1	37.9	
OCO	13.9	15.6	
MILCON	24.8	25.7	
Procurement	23.3	20.4	
ROTA&E	2.3	2.2	
MILPERS	30.7	32.4	
O&M	49.2	49.9	

OPERATIONS & MAINTENANCE

- Upgrade ISR sys supporting tactical teams operations
- Enhance C2 systems to enable surveillance, early warning and cyber connectivity
- Fund Flying hours to executable levels
- Fund weapons system sustainment to 90% (Base and OCO)
- Fund facility sustainment at 80% of requirement
- Expand combat training ranges
- Fund additional 1K ROTC scholarships for STEM diversity

Category (\$B)	FY18 PB	FY19 PB
Operating Forces	40.8	42.0
Mobilization	1.7	1.5
Training & Recruiting	2.1	2.2
Administration and Service Wide	4.6	4.3
Total	49.2	49.9*

* Includes \$4.8B of a total \$6.1B OCO to Base move as result of Congress' 2 year budget deal; an additional \$1.3B remains to be transferred.

The Air Force Must be Ready for Any Fight, Any Place, Any Time

MILITARY PERSONNEL

- Increase Active, Guard and Reserve end strength by 4,700
- Address gaps in RPA, cyber and intelligence career fields
- Continue increasing maintenance manpower and experience
- Address pilot shortage...optimize training capacity / incentives
- Right-size student training pipeline; focus on critical skills
- Support 2.6% pay raise to maintain competitive compensation
- Revitalize squadrons...restore lost manning

Category (\$B)	FY18 PB	FY19 PB
Pay & Allowances	27.7	29.5
Medicare Eligible Retiree	1.6	1.6
Health Care		
Permanent Change of Station	1.3	1.2
Other Military Pay	0.1	0.1
Total	30.7	32.4

Readiness Begins with People

RESEARCH, DEVELOPMENT, TEST & EVALUATION

- Increase funding for backbone of future bomber force (B-21)
- Increase the Air Superiority Family of Systems to enhance operational / threat studies
- Increase funding for space programs including Next Generation Overhead Persistent Infrared
- Begin GPS III Follow-on development
- Bolster International Partnerships including Enhanced Polar System-Recapitalization
- Invest in the Adaptive Engine Transition Program to deliver revolutionary, next-generation propulsion systems
- Continue ICBM modernization with Ground-Based Strategic Deterrent program (Minuteman III Replacement)

Category (\$B)	FY18 PB	FY19 PB
Operational Systems Development	11.2	13.1
Demonstration and Validation	4.7	6.5
Engineering & Manufacturing Development	4.5	5.3
Management Support	2.7	2.8
Applied Research	1.3	1.3
Advanced Tech Development	0.8	0.8
Basic Research	0.5	0.5
Total	25.6	30.4

We Must Deliver Performance at the Speed of Relevance

Please direct any questions to SAF/LL (703-697-4142), SAF/FMB (703-695-1875) or SAF/PA (703-697-8061)

 AIR FORCE FISCAL YEAR 2019 PRESIDENT'S BUDGET AT A GLANCE

PROCUREMENT

- Increase the production quantity to 48 F-35As
- Continue tanker recapitalization of 15 KC-46As
- Initiate Multi-Year Procurement for one HC-130J and six MC-130J aircraft to achieve cost savings
- Buy low rate initial production of 10 Combat Rescue Helicopters
- Support modifications of 4th/5th generation fighter aircraft
- Funding services for five Evolved Expendable Launch Vehicles
- Maximize production capacity for preferred munitions: JDAM, Hellfire, APKWS, and SDB-1
- Accelerate Distributed Common Ground System open architecture
- Invest in counter small unmanned aerial system

The Air Force Needs the Right Size and Mix of Lethal Capabilities to Outpace Our Competitors

MILCON, BRAC & MILITARY FAMILY HOUSING

Active:

- New mission beddowns: F-35A (\$315.0M); KC-46A (\$178.0M)
- Nuclear Enterprise (\$66.0M): Minot AFB Consolidated Heli/Tactical Response Force Ops Facility
- Research and Development (\$225.0M): MIT-Lincoln Labs semi-conductor/microelectronics lab
- MQ-9A Facilities (\$197.0M): Shaw AFB Ops Facility for new RPA mission beddown

Guard:

- New mission beddowns: C-130J Simulator (\$8.0M)
- Cyber Operations Squadron (\$10.0M)
- Recapitalize aging infrastructure (\$69.0M)

Reserve:

- Add/Alter Aircraft Maintenance Hangar (\$12.1M), Small Arms Range (\$9.0M)
- Aeromedical Staging Facility (\$4.6M), Physical Fitness Center (\$14.0M)
- Munitions Training/Admin Facility (\$3.1M)

Infrastructure Must be Optimized to Integrate Air, Space and Cyber Capabilities

OVERSEAS CONTINGENCY OPERATIONS (OCO)

- Operating support for deployed personnel and six enduring locations to include:
 - Flying Hours and Weapon System Sustainment
 - 10 Remotely Piloted Aircraft combat lines, \$1.8B for ISR platforms and support
 - Deployable Command, Control and Communications systems/special tactics combat control equipment
- Continue to build partnerships through the European Deterrence Initiative:
 - MILCON to improve European airfield infrastructure
 - War reserve materials, airfields, aircraft storage and munitions storage facilities in Europe

Air and Space Superiority Underwrite the Freedom of Action Required for Joint Operations

Category (\$B)	FY18 PB	FY19 PB
Aircraft	15.4	16.2
Space	3.4	2.5
Missile	1.6	1.8
Ammunition	1.4	1.6
Other Procurement	3.0	3.6
Total	24.8	25.7

Category (\$B)	FY18 PB	FY19 PB
Major Construction	1.8	1.5
Minor Construction	0.1	0.1
Planning and Design	0.1	0.2
BRAC	0.1	0.1
Military Family Housing	0.4	0.4
Total	2.4	2.2

Category (\$B)	FY18 PB	FY19 PB
O&M	10.3	10.7
Procurement	2.1	3.4
MILPERS	0.9	1.0
MILCON	0.5	0.3
RDT&E	0.1	0.2
Total	13.9	15.6*

* An additional \$1.3B will move from OCO to Base as result of Congress' 2 year budget deal

Please direct any questions to SAF/LL (703-697-4142), SAF/FMB (703-695-1875) or SAF/PA (703-697-6061)

February 20, 2018



A-10 Fleet

The A-10 is the only aircraft specifically designed for Close Air Support, Combat Search and Rescue, and Forward Air Controller Airborne missions. The Air Force will retain a modernized A-10 fleet for the foreseeable future. Updates to the Defense Planning Guidance, as well as completion of the F-35A and A-10C comparative test, will inform a future decision on how to retain the A-10 beyond 2021. The FY19 budget request is critical in providing the Air Force options for the A-10 fleet to continue to support current and future operations.

Key Points

Current funding supports 281 A-10s flying beyond 2019.

109 of the 281 A-10s will become unflyable due to expiration of their wings' service life. The first two will be grounded in FY18.

Current Air Force analysis projects 45 to 51 A-10 groundings by FY22 without new wings.

Context

Under the original wing replacement contract, 173 A-10s were upgraded with new wings. The FY18 and FY19 budgets will begin to address the expiration of service life on the remaining 109 A-10s.

The Air Force plans to use the \$103 million from the FY18 budget to award a new wing production contract and establish a new line for producing new A-10 wing kits. Establishing the production line now allows the Air Force to procure additional wings in future budgets.

With a contract awarded this year, the first set of new A-10 wings will be available in FY21. The Air Force will aggressively work to award a contract for purchasing wings once funding is appropriated.

Budget

Program	FY18	FY19	FYDP
A-10 Wings	\$0M*	\$80M (8-12 wing kits)	

*\$103M was included in the FY18 Unfunded Priorities List.

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

February 15, 2018



Air Superiority

U.S. AIR FORCE

Air Superiority—a degree of air control required to permit operations without interference—is a prerequisite for successful military operations. The new National Defense Strategy directs the Air Force to be able to strike targets inside adversary air and missile defense networks. The Air Force is developing an integrated family of capabilities to ensure it can continue to achieve this in 2030 and beyond.

Key Points

Adversary strategies are challenging the US's decades-long asymmetric air superiority advantage.

Air Superiority is the USAF's responsibility; we will continue to invest accordingly.

The FY19 budget balances aircraft modernization and recapitalization while developing needed advanced capabilities to enable air superiority in the future.

Context

To meet the demands of the National Defense Strategy, the Air Superiority family of systems combines targeted modernization, procurement, and investments to ensure the Air Force has required capability and capacity.

4th Generation Fighter Investments (modernize)

F-15C investments include airframe, avionics (computer) upgrades and infrared search and track (IRST) sensor additions. F-15E and F-16 investments are focused on avionics enhancements (computer, radar, and electronic warfare).

5th Generation Fighter Investments (modernize & procure)

F-22 funds are focused on avionics and weapons integration, such as the AIM-9X and AIM-120D air-to-air missiles. Continued procurement of the F-35 (48 in FY19) is critical to growing the fighter force and recapitalizing the fleet. Concurrent follow-on modernization (Block 4) maintains the F-35's technological advantage.

Next Generation Investments (invest)

Next Generation Air Dominance (NGAD) is an investment that will ultimately integrate a family of capabilities. FY19 adds \$2.7B, fully funding research and development to accelerate this effort.

Budget

Program	FY18	FY19	FYDP
F-15C/D/E Modernization	\$1,000M	\$1,100M	\$5,500M
F-16 Modernization	\$500M	\$500M	\$3,700M
F-22 Modernization	\$1,000M	\$1,000M	\$4,900M
F-35 Procurement/Modernization	\$6,300M	\$5,900M	\$31,700M

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

February 15, 2018



Bomber Vector

U.S. AIR FORCE

A key priority in the National Defense Strategy is to maintain a safe, secure, and effective nuclear deterrent. Bombers provide range, payload, precision, and flexibility as part of deterrence. The Air Force proposes to transition our bomber force from B-1, B-2, and B-52 aircraft to a fleet of B-21 and modernized B-52 aircraft. The future bomber fleet will be capable of employing a wide variety of conventional and nuclear weapons. Employment options will be either from outside (stand-off) or inside (penetrating) enemy air defenses.

Key Points

B-21 Raider: The FY19 budget funds continued development of the B-21.

B-52 Stratofortress Modernization: The Air Force proposes to modernize its fleet of B-52 aircraft which will serve until at least 2050. Modernization will include engine and radar replacement.

B-2 Spirit and B-1 Lancer Sustainment: During development and production of the B-21, the Air Force will sustain the B-2 and B-1 to assure no gaps in bomber force availability.

Context

B-21 Raider: The B-21 will carry both conventional and nuclear weapons, replace the B-1 and B-2 bomber fleet, and increase the overall bomber force. Procuring sufficient numbers of B-21s provides the President with options for any target across the globe. It has range, large mixed payload capability, and is survivable for the future threat.

B-52 Stratofortress: The B-52 also carries both conventional and nuclear weapons. It will carry the new nuclear Long Range Stand Off (LRSO) weapon. Investments in new engines, an upgraded radar, and enhanced survivable communications will extend the life of this dual-role platform beyond 2050.

B-2 Spirit: The B-2 is the single penetrating bomber platform the Air Force has until the B-21 is ready. The FY19 budget proposal funds Defensive Management Suite modernization and survivable communications upgrades.

B-1 Lancer: The FY19 budget funds upgrades for key systems on the B-1, including the rotary weapon launcher, crew displays, communications equipment, and full integration of the on-board targeting pod. These programs ensure lethality for combatant commanders and capability through airframe retirement.

Budget

Program	FY18	FY19	FYDP
B-1	\$1,233M	\$1,284M	\$5,580M
B-2	\$1,308M	\$1,222M	\$5,879M
B-52	\$1,384M	\$1,590M	\$9,492M
B-21	\$2,004M	\$2,314M	\$16,867M

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

February 15, 2018



Cost-Effective Acquisition

U.S. AIR FORCE

Cost-effective acquisitions are critical given our current economic pressures. The Air Force must strike the right balance between budgeting for today's readiness and investing in tomorrow's modernization. The new Congressional authorities provided to date are producing results. The Services have more authority and accountability in the execution of major programs. Working with Congress, we can improve our ability to outpace the threat and deliver capabilities to our Airmen to protect our vital national interests.

Key Points

New Congressional authorities are supporting Air Force efforts to accelerate the acquisition process to build a more lethal force.

The Air Force needs budget stability to successfully execute the National Defense Strategy. The most important actions the Congress can take is to provide predictable and stable budgets at the beginning of a fiscal year.

Context

Adjusting approval levels to meet intent of new authorities: Current law requires us to establish program cost and fielding targets that are approved by the Secretary of Defense or the Deputy Secretary of Defense. We are working with our counterparts within the Office of the Secretary of Defense to determine where such authority would be best located. These targets are already included in annual reports and baselines. (FY17 National Defense Authorization Act, Section 807)

Modernizing software acquisition processes: The Air Force is working to address challenges in the development and deployment of software-intensive systems. One area we are exploring is funding flexibility to align with more modern software practices.

Bid protest reform: We should weigh the value of requiring contractors to select one bid protest forum and live with the results, and not be permitted to file bid protests at the Court of Federal Claims after losing at the Government Accountability Office. It is vital to prevent lost time, effort, and delays of needed warfighter capabilities.

Streamlining our business processes. We are exploring ways to streamline our internal processes to eliminate duplication of effort wherever possible. We want to work with Congress to revise any statutory requirements which may be imposing duplication of effort.

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)



U.S. AIR FORCE

Cyber

The expansion of threats in cyberspace from adversary nations and non-state terrorists, hackers, and criminal organizations provide new threats to military personnel, infrastructure, and equipment. In accordance with the National Defense Strategy, the Air Force will invest in cyber defense, resilience, and the continued integration of cyber capabilities. The FY19 budget proposal funds various programs and capabilities, to include critical investments in Enterprise Information Technology as a Service, Cyber Operations, Cyber Mission Forces, Joint Capabilities, and Weapon System Cyber Resiliency.

Key Points

Enterprise Information Technology as a Service

Select information technology tasks and services that are not inherently governmental will be shifted to industry.

Cyber Operations: Trains and equips Airmen, establishes Mission Defense Teams and accelerates cloud migration.

Cyber Mission Force: Sustains 39 Total Force teams.

Joint Capabilities: Consolidates service-unique Cyber platforms to improve joint interoperability, situational awareness, and command and control.

Weapon Systems Cyber Resiliency: Embed resiliency and cyber security in all phases and activities of the acquisition life cycle.

Context

Enterprise Information Technology as a Service. The Air Force will leverage industry partners and commercial solutions for increased information technology effectiveness and security. This frees our Airmen to focus on defense of Air Force core functions and weapons systems. The FY19 budget provides \$223M to support initial implementation across the service.

Cyber Operations. The FY19 budget funds training and equipment for Airmen to enhance cyber effectiveness. Additionally, the Air Force has established Mission Defense Teams for our combat wings to defend Air Force missions, facilities, and networks. We will also accelerate cloud migration using an additional \$60M in the FY19 budget.

Cyber Mission Force. The Air Force provides 39 of 133 DoD Cyber Mission Force teams. Six of these 39 are in the Guard or Reserve.

Joint Capabilities. The Air Force is leading the development of a Unified Platform and Joint Cyber Command and Control Capabilities. These programs consolidate service-unique Cyber platform capabilities and integrate command and control of cyber operations across the Department of Defense. The FY19 budget provides \$71M to defend our networks and increase joint lethality.

Weapon Systems Cyber Resiliency. The Air Force is pursuing mission assurance for weapon systems in a cyber contested environment. This effort reduces cybersecurity vulnerabilities to infrastructure, weapon systems, and business systems to enable military operations.

Budget

Program	FY18	FY19	FYDP
Enterprise Information Technology as a Service	\$ -	\$223M	TBD
Cyber Operations	\$724M	\$900M	\$4,168M
Cyber Mission Force	\$686M	\$634M	\$3,164
Joint Capabilities	\$ -	\$71M	\$270M
Weapon System Cyber Resiliency	\$46M	\$82M	\$411M

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

February 20, 2018



Facilities

U.S. AIR FORCE

Installations – the Air Force's power projection platforms – are a critical component of readiness and lethality. The FY19 budget proposes to fund new construction at various installations and to sustain our existing infrastructure. The proposed Maintenance and Repair rate is 1.5% of the Plant Replacement value, the value of all facilities, utilities, and infrastructure owned by the Air Force, and an average of 1.8% over the FYDP. We typically receive additional funding during year of execution, bringing our projected FYDP average to 2.3%, which is consistent with historical averages over the past decade.

Key Points

Military Construction (MILCON): Focuses on readiness and lethality by funding weapons system bedowns, combatant commander priority needs, and recapitalizing research, development, test, and evaluation infrastructure.

Facility Sustainment, Restoration, and Modernization (FSRM): Focuses on sustainment as well as repairing, maintaining, and modernizing "mission critical, worst first" aging facilities—minimally addresses the growing \$33B infrastructure backlog.

Context

Military Construction (MILCON): The Air Force is focusing MILCON in three areas. Combatant Command requirements that include projects around the globe. Weapons system bedowns that include F-35As at RAF Lakenheath, UK and Eielson AFB, AK; KC-46s at Altus AFB, OK and Tinker AFB, OK; and MQ-9s at Creech AFB, NV and Shaw AFB, SC. We also propose to modernize our research, development, and test infrastructure at Hanscom AFB, MA. A complete list can be found on the reverse side.

Facility Sustainment, Restoration, and Modernization (FSRM): The Air Force proposes to fund facilities sustainment at 8% over the previous year. This minimally addresses of our total facility maintenance backlog, currently estimated at \$33B. The Air Force decreased funding for Restoration and Modernization over the previous year to focus on sustainment activities while still performing Restoration and Modernization at facilities across the Air Force based on consequence and probability of failure.

Budget

Program	FY18	FY19	FYDP
Military Construction (MILCON)	\$1,964M	\$1,778M	\$11,253M
OCO Military Construction	\$480M	\$346M	-
Facilities Sustainment, Restoration, and Modernization	\$3,743M	\$3,317M	\$21,429M
OCO Facilities Sustainment, Restoration, and Modernization	\$113M	\$92M	-

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

FY19-23 PB MILCON List					
Component	FY	Base	State	Description	PA (\$K)
Active	18	Various Worldwide	ZU	Planning and Design	183,727
Active	19	Various Worldwide	ZU	Planning/Design (Exp USAFE/Africa PDM & F-35)	31,850
Active	19	Various Worldwide	ZU	Unspecified Minor Military Construction	38,500
Active	19	JB Andrews	MD	Presidential Aircraft Recap (PAR) Complex	154,000
Active	19	JB Andrews	MD	PAR Relocate Haz Cargo Pad and EOD Range	37,000
Active	19	Altus	OK	KC-46A FTU Fuselage Trainer Phase 3	12,000
Active	19	Tinker	OK	KC-46A Depot Fuel Mx Hangar	85,000
Active	19	Tinker	OK	KC-46A Depot MX Hangar	81,000
Active	19	Eglin	FL	F-35A Student Dormitory II	28,000
Active	19	Eglin	FL	F-35A Integrated Tng Center Academics Bldg	34,863
Active	19	Luke	AZ	F-35A Squad Ops #6	17,000
Active	19	Luke	AZ	F-35A ADAL AMU B914 Sq 6	23,000
Active	19	RAF Lakenheath	UK	F-35A FUEL SYS MAINTENANCE DOCK 2 BAY	16,880
Active	19	RAF Lakenheath	UK	F-35A PARKING APRON	27,431
Active	19	RAF Lakenheath	UK	F-35A AGE FACILITY	12,449
Active	19	RAF Lakenheath	UK	F-35A 6 BAY HANGAR	39,036
Active	19	RAF Lakenheath	UK	F-35 Conventional Munitions Mx	9,204
Active	19	RAF Lakenheath	UK	F-35 Dorm (144 Bed)	29,541
Active	19	RAF Lakenheath	UK	F-35A PARTS STORE	13,926
Active	19	Eielson	AK	F-35 School Age Facility	22,500
Active	19	Eielson	AK	F-35A Demo/Replace B3307 for First Squ AMU	8,800
Active	19	Eielson	AK	F-35A Conventional Munitions Mx Facility	15,500
Active	19	Eielson	AK	F-35 CATM Range Eielson	19,000
Active	19	Neills	NV	CRH Simulator	5,900
Active	19	Creech	NV	MQ-9 CPIP GCS Ops Facility	28,000
Active	19	Creech	NV	MQ-9 CPIP Ops & Command Center Facility	31,000
Active	19	Shaw	SC	CPIP MQ-9 MCE Group	53,000
Active	19	Holloman	NM	MQ-9 FTU Ops Facility	35,000
Active	19	Minot	ND	Consolidated Helo/TRF Ops/AMU and Alert Fac	66,000
Active	19	iBSA-Lackland	TX	BMT Dorm 6	25,000
Active	19	Offutt AFB	NE	STRATCOM HQ Parking Lot	9,500
Active	19	Al Udeid	QA	Flightline Support Facilities	30,400
Active	19	Al Udeid	QA	Deployment Processing Facility	40,000
Active	19	Classified - Worldwide	ZC	TACMOR - Utilities and Infrastructure Support	18,000
Active	19	Timan	ML	APR - Cargo Pad with Taxiway Extension	46,000
Active	19	Tinian	ML	APR - Maintenance Support Facility	4,700
Active	19	JRM-Andersen	GU	Hayman Munitions Storage Igloos MSA-2	9,800
Active	19	Hanscom	MA	MIT-Lincoln Laboratory [West Lab CSL/MIF]	225,000
Active	19	Maddill	FL	KC135 Beddown Add Ft Smitr Training	3,100
Guard	19	Costa Mesa ANGS	CA	Construct C-330 Flight Simulator Facility	8,000
Guard	19	Peoria Regional Airport	IL	Construct New Fire Crash/Rescue Station	9,000
Guard	19	Hickam	HI	Construct Addition to F-22 LO/CRF B3408	17,000
Guard	19	Fort Indiantown Gap	PA	Replace Operations Training/Dining Hall	8,000
Guard	19	JB-Langley Eustis	VA	Construct Cyber Ops Facility	10,000
Guard	19	New Orleans	LA	NORTHCOM - Construct Alert Apron	15,000
Guard	19	Francis S. Gabreski	NY	Security Forces/Communication Training Facility	20,000
Guard	19	Unspecified Worldwide	ZU	Unspecified Minor Military Construction	23,626
Guard	19	Various Worldwide	ZU	Planning and Design	18,500
Reserve	19	Grisson ARB	JN	Add/Alter Aircraft Maintenance Hangar	12,100
Reserve	19	Fort Worth	TX	Munitions Training/Admin Facility	3,100
Reserve	19	Keesler AFB	MS	Aeromedical Staging Squadron Facility	4,530
Reserve	19	Unspecified Worldwide	ZU	Planning and Design	4,055
Reserve	19	Unspecified Worldwide	ZU	Unspecified Minor Military Construction	3,338
Reserve	19	Minneapolis-St Paul IAP	MN	Small Arms Range	9,000
Reserve	19	Niagara Falls IAP	NY	Physical Fitness center	14,000
					1,777,896

February 15, 2018



Light Attack Aircraft

U.S. AIR FORCE

Twenty-seven years of continuous combat operations have strained the Air Force's high-end fighter and attack fleets. Light attack aircraft provide a low-cost solution, and are one of the ways we can build capability among allies and international partnerships. The Air Force proposes to continue the light attack aircraft experiment in 2018, developing concepts of operation and further defining requirements in preparation for fielding a force of U.S. light attack aircraft during this five-year plan.

Key Points

- Low-cost, non-developmental, rapid fielding-suitable
- Builds international partner capacity and strengthens partnerships
- Additive capacity for counter-land missions and air-to-ground tasks
- Not an A-10 replacement

Context

We are focusing on procurement and fielding strategies that leverage existing capabilities with little or no new development required. Our current five-year budget sets aside funds to buy light attack aircraft for the Air Force pending the outcome of current experimentation.

Light attack will positively contribute to readiness issues, pilot capacity, building international partner capacity, and aircraft availability for training and support to ground forces.

International partners have also expressed an interest in an affordable, less complex, lower-end fighter/attack capability. Five international partners observed the Light Attack Experiment in 2017, and we plan to invite more partners to the experimentation events in 2018. We see a substantial benefit to building interoperability through light attack, as we fight violent extremism at a lower cost.

Envisioned light attack aircraft missions: Close Air Support (CAS), Air Interdiction (AI), Combat Search & Rescue (CSAR), Strike Coordination & Reconnaissance (SCAR), Armed Reconnaissance, & Counter-Maritime/SOF, and Forward Air Control - Airborne (FAC-A).

Budget

Program	FY18	FY19	FYDP
Light Attack	\$8M*	\$0M**	\$2,469M

* Asking for an additional \$26M in appropriations to fully fund the experiment

** Programmed acquisition funding starts in FY20

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

February 15, 2018



Munitions

In the past four years, approximately 70,000 munitions were expended in Afghanistan, Iraq, and Syria. Munitions come in three categories: Air-to-Air missiles and Air-to-Ground munitions including Direct Attack and Standoff. To meet demand, the Air Force is working with industry to increase production. Procuring munitions at industry capacity requires sustained funding.

Key Points

Budget stability is required to meet the munitions demand for current operations while also preparing for future requirements.

The FY19 budget fully funds preferred munitions to industry capacity. It maximizes procurement of the Joint Direct Attack Munitions (JDAM), Small Diameter Bomb (SDB), Hellfire, and Advanced Precision Kill Weapon System (APKWS).

Context

The USAF is experiencing shortfalls in all categories of munitions – Air-to-Air, Direct Attack, and Standoff. Current munition expenditures in Iraq, Syria, and Afghanistan are outpacing procurement of Direct Attack and Standoff weapons. The shortfall in Air-to-Air missiles is due to a combination of technical issues, requirement increases and lack of funding.

The Air Force FY19 budget expands industry capacity to maximize procurement of the JDAM, SDB, Hellfire, and APKWS munitions for the next several years (descriptions are in a table below). Current operations replenishment is funded through Overseas Contingency Operations (OCO) funding. The USAF preferred munition inventory will be restored over time at steady maximum production.

The Air Force will continue to invest in developing advanced munition capabilities to ensure warfighters are properly equipped in the future.

Budget

Program	FY18	FY19	FYDP
Munitions	\$1,601M	\$1,779M	\$4,207M

Munition	Number	FY19	Description
JDAM	36,000	\$973M	Joint Direct Attack Munition is a guidance kit that can be fitted on existing general purpose bombs to improve their accuracy and provide all-weather capability.
Hellfire	4,354	\$369M	Hellfire is a rocket-propelled, laser guided, supersonic weapon designed to defeat individual hard point targets.
SDB	6,853	\$254M	Small Diameter Bomb is a 250-lb class weapon designed as a low collateral damage, air-to-ground, precision-guided munition capable of engaging stationary targets from tactically significant standoff ranges in all weather.
APKWS	7,279	\$183M	The Advanced Precision Kill Weapon System guidance kit transforms an unguided 2.75-inch rocket into a precision-guided munition capable of engaging soft targets with low collateral damage.

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

February 15, 2018



Networked Command and Control

The 2018 National Defense Strategy recognizes we now face a more lethal and disruptive battlefield, combined across domains, and conducted at increasing speed and reach. The FY19 budget proposes modernizing existing command and control platforms, while developing and transitioning to an advanced battle management system. Our approach will integrate space, air, and ground based sensors on manned and unmanned platforms.

Key Points

Joint Force Commanders rely on integrated and assured command and control capabilities—a networked system of systems comprised of sensors, voice and data communications networks that transit air, space, ground, maritime, and cyber domains—to convey vital information, intelligence, and instructions.

Investments in alternate command and control pathways across multiple domains will provide battle management in a contested environment.

Enhanced integration requires a gateway that passes information collected from 5th generation assets to 4th generation assets.

Context

Multi-Domain Command and Control. Provides information in a distributed network environment so it is easily accessible through air, space, cyber, sea, and land. In addition, the FY19 budget funds wargaming and experimentation to develop new warfighting command and control capabilities.

High Frequency (HF) Radio systems. The FY19 budget funds development and fielding of next-generation airborne HF network for the Air Force and provides survivable radios that increase the resiliency of our command and control capabilities.

Battlefield Airborne Communications Nodes (BACN). The FY19 budget develops and fields a high-speed, resilient airborne communications network to enhance current command and control capabilities. Also, in 2019 this program transfers from Overseas Contingency Operations funding to the baseline budget.

Joint Aerial Layer Network (JALN). The FY19 budget upgrades airborne communications to enable data-sharing between 4th Generation (e.g. F-15, F-16) and 5th Generation (e.g. F-22, F-35) aircraft in both permissive and contested environments.

Budget

Program	FY18	FY19	FYDP
Networked C2 Operations	\$5,886M	\$5,901M	\$30,553M

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

February 15, 2018



U.S. AIR FORCE

Nuclear Deterrence

The 2018 National Defense Strategy and the Nuclear Posture Review reinforce the need to concurrently modernize our nuclear command, control, and communications, the nuclear triad (bombers, intercontinental ballistic missiles, and ballistic missile submarines), and the infrastructure that enables its effectiveness.

The Air Force provides approximately 75 percent of the Defense Department's nuclear command, control, and communications capabilities and operates two legs of the triad—intercontinental ballistic missiles and nuclear capable aircraft. The FY19 budget fully supports nuclear modernization to include nuclear command, control, and communications, intercontinental ballistic missiles (ICBM), and nuclear capable aircraft.

Key Points

Nuclear Command, Control, and Communications (NC3): Ensures National Leadership control of nuclear forces.

Ground-Based Strategic Deterrent (GBSD): Replaces the aging Minuteman III ICBM.

Long Range Standoff (LRSO) Missile: Replaces the aging Air Launched Cruise Missile and equips strategic bombers with a survivable stand-off capability.

UH-1N Replacement: Replaces Vietnam-era helicopters to meet missile field security and Continuity of Government mission requirements.

Context

Nuclear Command, Control, and Communications (NC3): NC3 systems were last comprehensively updated almost three decades ago. The FY19 budget funds new satellite terminals for the B-52 and nuclear ground units to provide reliable, survivable communications. The budget also funds upgrades to terrestrial systems for daily command and control of nuclear forces, as well as recapitalization of the E-4 National Airborne Operations Center aircraft.

Ground-Based Strategic Deterrent (GBSD): The Minuteman III missile was fielded in 1973. GBSD will deliver an integrated weapon system to replace the Minuteman III and meets ICBM requirements through 2075. The program provides operations, maintenance, and security.

Long Range Stand Off missile (LRSO): LRSO will replace the current Air Launched Cruise Missile. LRSO provides bombers with a survivable stand-off capability to strike multiple targets simultaneously from a single platform. It is a reliable, cost-effective force multiplier.

UH-1N Helicopter Replacement: Air support is a key component of ICBM security. The UH-1N replacement will provide the necessary speed, range, endurance, and carrying capacity to meet today's threats throughout multiple operating environments.

Budget

Program	FY18	FY19	FYDP
Nuclear Deterrence	\$10,579M	\$12,296M	\$72,424M

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

February 15, 2018



Readiness

The 2018 National Defense Strategy recognizes the surest way to prevent war is to be prepared to win. This requires a consistent, multiyear investment to increase the lethality of the force so that we can win any fight, any time. The FY19 budget funds an increase in personnel, executable flying hours, spare parts, depot work, and the key infrastructure required to improve the quality of our training against peer competition.

Key Points

Increase end-strength by approximately 3,300 Airmen a year over the next five years with a focus on gaps in critical fields.

Fund flying hours to executable levels and increase training hours to focus on pilot production and pilot seasoning.

Fund weapons system sustainment to accelerate repairs, equipment maintenance, and aircraft availability.

Continue to improve training environments to enable our Airmen to train at home for a high-end, multi-domain fight.

Context

Readiness is first and foremost about having enough trained people. We continue to address the shortage of experience aircrew through a multi-pronged approach including expanding pilot training, addressing experience shortfalls, and continuing quality of service initiatives. We will also address gaps in space, nuclear, cyber, intelligence, and Battlefield Airmen career fields.

We are increasing our flying hours to executable levels. With the investments and support for increased manning, we expect to increase the average annual flying time and overall experience across the force.

Weapons system sustainment is the maintenance support that keeps military equipment functioning over its lifespan; it's the spare parts, depot work, and personnel. Readiness requires predictable and stable funding and continuous updates to limited training resources.

The FY19 budget funds training ranges, simulators, instructors, and key infrastructure required to improve the quality of our training in an increasingly complex security environment with continually evolving adversary capabilities.

Budget

Program	FY18	FY19*
Manpower (+4,700)	\$30,700M	\$31,200M
Weapons System Sustainment	\$14,700M	\$15,100M
Flying Hour Program (Peacetime only)	\$6,200M	\$6,400M
All Munitions	\$4,300M	\$5,800M

*OSD Readiness Review outcome may change the figures.

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

February 15, 2018



Science, Technology, and Innovation

The Air Force depends on its Science and Technology program and innovation efforts to prepare for the national security challenges of today and the changing character of future conflict. For this reason, the Air Force launched a year-long effort to develop a new Science and Technology strategy that will guide research and development, and prepare the Air Force for the national security challenges of 2030 and beyond. The Air Force has maintained basic and applied research investment related to longer-term national security challenges, but seeks to increase investment over the next several years to ensure US national security advantage in the air, space, and cyber domains.

Key Points

Science and Technology underpin the Air Force commitment to innovative and affordable response to warfighter needs now and for the future.

Prototyping and experimentation bring technology out of the laboratory and into the hands of the warfighter faster.

Context

The FY19 budget places emphasis on our Science, Technology, and Innovation investments to drive long-term dominance in air and space power. These investments are the seed corn that ensures the Air Force and the Joint Force will have a technological advantage over our adversaries.

Prototyping and experimentation are essential learning tools that help demonstrate and expand the art-of-the-possible. They inform requirements, costs, and benefits prior to a lengthy acquisition process.

For example, the Air Force continues to accelerate hypersonics prototyping efforts to pursue early operational weapon capabilities. The Air Force's two hypersonic weapon prototyping efforts are called Hypersonic Conventional Strike Capability (HCSW) and Air Launched Rapid Response Weapon (ARRW). Additionally, recent breakthroughs in engine technology can improve the range, power output, and stealth capabilities of fighters.

Budget

Program	FY18	FY19	FYDP
Science and Technology	\$2,583M	\$2,645M	\$13,911M
Hypersonics Prototyping	\$90M	\$258M	\$524M
Adaptive Engine Transition Program	\$593M	\$790M	\$1,829M
Lifecycle Prototyping	\$62M	\$51M	\$212M
Experimentation	\$96M	\$87M	\$439M

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

February 15, 2018



Space Superiority

The 2018 National Defense Strategy prioritizes investments in resilience, reconstitution, and operations in space. The FY19 budget proposes to accelerate our efforts to deter, defend, and protect against anyone who seeks to deny our ability to freely operate in space. We will build more jam-resistant GPS satellites and improve missile warning, satellite communications, and space situational awareness to increase our ability to defend our Nation's most vital assets on orbit.

Key Points

Space Force Enhancement: Delivers critical positioning, navigation, and timing (or GPS); missile warning; environmental monitoring; satellite communications; and command and control to enhance the lethality of the joint force.

Space Situational Awareness: Adds new ground and space-based capabilities, in addition to modernizing key nodes of current architecture.

Space Support: Continues investment to maintain the United States as the world leader in space launch.

Space Control: Adds classified and unclassified space capabilities to provide space superiority.

Context

Position Navigation and Timing: The Air Force proposes to fund GPS user equipment upgrades which allow warfighters to operate freely in GPS degraded environments. The budget proposes to accelerate fielding of GPS anti-jam signals.

Next Generation Overhead Persistent Infrared: Will detect and report on current, emerging, and anticipated missile threats and will be designed for survivability against potential adversary attack.

Weather System Follow-on: Replaces the Defense Meteorological Satellite Program weather constellation, in service for over 5 decades, with a follow-on program using rapid acquisition authorities to support modernized environmental monitoring.

Satellite Communications: The FY19 budget proposes to improve the Advanced Extremely High Frequency and Wideband Global Satellite Communication systems, and continues to fund development of next generation protected satellite communications services.

Command and Control: Adds people and systems at the National Space Defense Center, Joint Space Operations Center, and Joint Overhead Persistent Infrared Center to strengthen command and control.

Please direct any questions to SAF/LL (703-697-4142) or SAF/PA (703-697-6061)

Space Situational Awareness: Enhances our ability to identify, characterize, and attribute threatening actions. In FY19, the Air Force proposes accelerating the Ground Based Optical Sensor System, Deep Space Advanced Radar, and the next generation Space Surveillance Satellite.

Space Launch: The FY19 budget seeks competitive launch services to replace reliance on foreign components. The Air Force aims to host communication and navigation payloads on partner satellites to save funding.

Space Control: The FY19 budget will accelerate Defense Force Packaging, Battlespace Management Command and Control, and space warfighting architectures through prototypes and experimentation in both classified and unclassified space portfolios.

Budget

Program	FY18	FY19	FYDP
Position, Navigation, and Timing (GPS)	\$32M	\$0M	\$3,700M
Next Generation Overhead Persistent Infrared	\$71M	\$643M	\$7,400M
Protected SATCOM	\$187M	\$491M	\$1,500M
Command and Control	\$88M	\$99M	\$523M
Space Situational Awareness	\$93M	\$220M	\$1,000M

SPACE FORCE

Ms. GRANGER. Thank you very much.

Before we begin questions, you understand that we have the same limit on each member's questions and response, is timed to 5 minutes.

I am going to start with questions regarding something that has just happened, so I would like to start that, go to Mr. Visclosky. And then Chairman Rogers and Chairman Calvert both have hearings they have to go to, so we will have a different sort, and go to you all after that.

Secretary Wilson, yesterday, the President made a statement suggesting that the administration supports the idea of a space force. I want to know what your understanding of the current policy is, and how do you interpret the President's remarks? And then both of you and Secretary Mattis have expressed concern about this in the past, could you please reiterate your reasons for opposing this idea?

Ms. WILSON. Thank you, Madam Chairman.

As the President said yesterday, the new National Defense Strategy for space recognizes that space is a warfighting domain. We appreciate the President and the Vice President's leadership on space. Nowhere is that leadership more clear than the President's budget, which the chief and I are here to talk to you about today.

This budget accelerates our efforts to deter, defend, and protect our ability to operate and win in space. There are a number of different elements of this with respect to the space portfolio, but they really—it really starts to focus intensely on space situational awareness, the ability to command and control what is going on in space, and the ability to create effects in space in order to protect our assets on orbit. And it is a significant change in this President's budget.

General GOLDFEIN. Madam Chairwoman, I will just say that I am excited about the dialogue. In 2011 to 2013, I was deployed forward as the air component commander in Central Command, and one of my—

Ms. GRANGER. Could you speak up a little bit louder, please?

General GOLDFEIN. Yes, ma'am.

I was saying Hagel that, from 2011 to 2013, I was deployed forward with then-General Mattis as his air component commander in Central Command. One of my responsibilities for him was to be his space coordinating authority and to take those capabilities that we bring from space and ensure that they were connected to his operational planning.

As a Joint Chief, I see that same responsibility as the lead Joint Chief for space operations, is making sure that we have those capabilities that the joint team requires. And so as the President stated openly, this is a warfighting domain. That is where we have been focused, and so I am really looking forward to the conversation.

Ms. GRANGER. Anything to add?

Thank you very much.

Ms. McCollum.

PILOT SHORTAGES

Ms. MCCOLLUM. Thank you, Madam Chair.

Secretary, General, thank you for testifying here today. Thank you for stopping by in the office.

So I am going to just follow up on the record and ask you to continue to work with the committee on dealing with the hypoxia issue, especially the psychological effects on our pilots.

And, also, I asked the same question of the Navy—and I will with all the branches, have people who are flying—what we are doing to coordinate together to solve this problem because this is across-the-force problem.

And I want to make sure that there is coordination, because, one, we will get the answer faster; two, it will save taxpayers money; and three, all the pilots in all our branches of the service will know that they are being equally looked out and after.

And then we talked briefly about pilot shortages as well, and as I mentioned, we are experiencing that not only in the Department of Defense but in other agencies as well. What we can do as a committee to either help you with addressing the pilot shortage as well as what we, as a committee, if you need additional resources to deal with the pilot hypoxia issue.

And, Madam Chair, I know sometimes we hear from the senior medical officers in a briefing, and if we do, I would like to ask them this question; if we are not, if that is not on the briefing schedule, I will be submitting some questions to them, as well.

NUCLEAR POSTURE REVIEW

The question for today though is on the nuclear weapons recapitalization, and I wanted to ask you about the budget implications of this Nuclear Posture Review. The review states that the recapitalization and modernization of nuclear forces could require resources of over 6 percent—6 percent—of the Department's current budget going forward. The requirement in NPR could end up costing taxpayers well over \$1 trillion over the next few decades. And at a time when we are struggling to meet domestic priorities for the people that we all represent in this room and my constituents are telling me that their needs are not being met, I find the budgetary implications here to be quite alarming going out to the future.

The Department is also advocating for the modernization of our conventional forces. So I want to ask you both, given that the Air Force has responsibility for much of the Department's nuclear command, how does the Air Force prioritize modernization and recapitalization of our nuclear forces against the needs to modernize our conventional forces?

And why are systems like the long-range standoff missiles necessary to maintain a credible nuclear deterrent? How are you going to prioritize to meet all your needs? Six percent of the Department's current budget going forward is quite a bite out of the budget?

Thank you, Madam Chair.

Ms. WILSON. Madam Chair, I will take on the first two of those and then turn to the chief for some additional elaboration.

The Nuclear Posture Review reaffirms the importance of the triad and nuclear command and control and communication. And it says that it is our responsibility as the military to maintain a safe, secure, and effective nuclear deterrent.

For the United States Air Force, that is two out of the three legs of the triad. We are moving forward in this budget with the recapitalization or the replacement of the Minuteman-III missile, which has not been updated since the 1980s, and it is just too expensive to continue to maintain.

The one that you mentioned, the long-range standoff munition replaces the air-launch cruise missile. I was out in Minot, North Dakota, with our maintainers there, and they were showing me why we need a replacement for the air-launch cruise missile for the airborne leg of the triad. The materials over time just—they just wear out, and we need to replace the system.

You also mentioned nuclear command, control, and communication, and the Air Force has a significant part of that as well. And this budget focuses on recapitalizing nuclear command, control, and communication.

There is one piece that you didn't mention, and it is not really an Air Force mission directly, although we operate part of it, which is ballistic missile defense, which is also part of the nuclear deterrent. Nuclear weapons have helped to keep the peace since the end of the Second World War, and the nuclear deterrent is a core mission for the United States Air Force, and one that we have shoul-dered willingly.

I would add, your question about pilot shortages, this budget proposes to increase training to about 1,400 pilots a year for the Air Force to try to increase the way in which we absorb pilots into squadrons, which is actually one of the limiting factors, and then tries to retain more pilots. And the Congress has authorized us to do some things with respect to finances.

But the most important thing that we can do, and Congress can help in this, is that we are too small for all of the missions that the Nation is asking of us, and I worry that we are burning out our people with deployment rates that are just too hard to sustain over time; and that, in the middle of their careers, airmen are often trying to make that choice of whether they can continue at that high of pace for deployments.

And maybe I would ask the chief to answer the OBOGS question and whatever else.

General GOLDFEIN. Yes, ma'am.

And I would just offer, on the nuclear, I would just—Secretary Mattis had stated, and I agree, that, you know, at 5 to 6 percent of the budget for the nuclear enterprise, the Nation can afford to defend itself. And I absolutely am with the Secretary when it comes to the loss of life that we experienced before nuclear weapons were introduced and then what has happened since then.

When it comes to the kinds of weapons, the Nuclear Posture Review validated once again the requirement for three legs of the triad and then tie it together with the command and control. And then, as the service, they are responsible for two-thirds of that. We make it an extremely high priority in our budget.

When it comes to those specific parts of the nuclear enterprise, you mentioned the long-range standoff missile. This is all based on supporting General Hyten as the Strategic Command Commander, or the STRATCOM Commander, and his plans that require us to be able to hold targets at risk. And all three legs of the triad and the munitions they carry all contribute to his operational plan, so that is what drives the actual requirement that was validated in the NPR.

When it comes to the—you know, when it comes to the T-6 and the oxygen generating system and the decision that the Secretary and I made to ground the fleet, we just had too many incidents that caused our concern. This is an aircraft that has been flying for years. We have got over 2 million safe flying hours.

But we had a series of incidents that happened in a short time-frame that caused us to stop, ground the fleet, put a team of engineers and operators together to go in and look at the entire system, pull it apart. And what we found was that there were three parts of the system that were actually failing at a much higher rate than we had anticipated.

And so we put our actions in place to go replace those parts. As those parts come in and we complete those actions, those airplanes are getting back in the air. We are on track right now to get to 275 this month aircraft back in the air of the 444, and we will have the remainder of them flying this summer.

What I will tell you is, we learned in the F-22 that as we worked through the engineering piece of this, we lost the communication with our families. And so one of the things that we are doing aggressively in this T-6 is being really inclusive with pilots and their families to let them know every step of the way exactly what we are doing.

And so, as we get back in the air, I am pretty proud of the team that has come together to make sure that we do this at a level that the Secretary and I are comfortable with.

Ms. GRANGER. Thank you.

Chairman Rogers.

PILOT SHORTAGE

Mr. ROGERS. Thank you, Madam Chairman.

Madam Secretary and General, welcome to the subcommittee.

We are especially delighted to see the Secretary back in her old haunts here on the Hill. We are proud of you, Madam Secretary, and we wish you and the general lots of good results.

Let me talk to you briefly about pilot shortage, as has been mentioned so far. At the end of fiscal 2017, Air Force reported a shortage of 1,812 pilots. It has also been reported recently that the Marine Corps pilots are flying more hours than Air Force pilots.

General Goldfein, perhaps you are best to answer this: What is the status of your pilot shortage now?

General GOLDFEIN. Yes, sir. And, first, just to correct the record, we went back and took a look at the actual number of hours that our folks are flying. And, in fact, we are pretty much in parity with other services and, in fact, our joint teammates in many ways. The average pilot was flying, in 2016, about 17.8 hours. We are on track now with investments we are making to get up to 20 hours

per year—or 20 hours per month when it comes to the actual flying. So we are flying at the same rate as the Marine Corps, the Navy. All the services are flying the same.

As we have dug into the details and analyzed the issue, it really comes down to two areas that we are investing in and focused on: One is how many pilots we produce; and then, two, how many pilots we retain, because you have to get both of those right.

And we have identified a target that we have laid the money in for it to get us to 1,400 pilots per year that we produce, and we will achieve that in 2020. We are going to work our way into 1,200 pilots a year, 1,300 pilots a year, 1,400 pilots a year.

We are going to be short of that this year, primarily because of the T-6 grounding, and so we are going to be about 200 short of that. But we appreciate Congress' help in this, because the money that you laid in the budget is going to allow us to produce at the rate that allows us to sustain the force that we need.

On the retention side of the house, we really appreciate what Congress has done to authorize us to increase the pilot bonus, but we are also finding that it is a combination of quality-of-service and quality-of-life initiatives that we are working on to increase retention of the force.

We have over 66 initiatives that we are working simultaneously now that is looking at, you know, how do we produce more control over time? The Secretary talked about operational tempo. We are looking at assignment processes, how we can get people more time at one assignment. We are looking at talent management that we are doing.

So we have a number of actions that we are taking that is looking at both production and retention going forward. And, right now, we believe we are on track to be able to get to a sustainable force model in 2020.

Final point, while we are 2,000 pilots short right now, I think it is very important to know that we are not short in the operational field. We are manning the operational field in cockpits to 98 percent to 100 percent. Where we are actually managing the risk is on the staffs, where we have positions where we require pilots. So the staffs are short, but cockpits forward are full up.

Mr. ROGERS. I understand that you have been seeking retired pilots to return to Active Duty and that applications are being submitted. Is that correct?

General GOLDFEIN. Yes, sir, it is.

Mr. ROGERS. And how is that working?

General GOLDFEIN. Sir, right now, the authorization we have is for 1,000, and we are just in the early day—early months of that putting forward. We have had, on average, 15 or so folks who are coming back, and we are actually reaching out.

I will tell you that my father, who is an 85-year-old retired fighter pilot that lives in a retirement community, is really excited about coming back. And I have had to tell him that, hey, Dad—

Mr. ROGERS. Old soldiers never die.

General GOLDFEIN. That is right. That is right. He has a T-shirt that says, "The longer I live, the better I flew."

Mr. ROGERS. What is the reason that they are leaving the Air Force? Is it money?

Ms. WILSON. Sir, I think it is—there is a variety of things. First, the airlines are hiring. The airlines—you know, it is mandatory retirement from the airlines at age 65, and they are hiring 4,500 pilots a year, is what the projection is, and that is not going to slow down. So there is an opportunity to be able to make a fair amount of money as a pilot in the private sector.

The second thing is, is that—a recent change to the law in recent years that said you can't sign on with a regional airline until you have 1,500 flying hours. So the path to be able to get to be a commercial pilot is very limited. You can fly in the Air Force for 3 or 4 years and still, you know, you are finally at full-time flying, maybe get to 1,500 hours.

But from the inside, for someone who comes in and serves for 10 years as a pilot, it is really not just about the money. People don't come to be an Air Force pilot for the money. They come to serve. But there is also that point it gets to where you think: You know something. Over the last 3 years, I have been deployed for 18 months, and even when I am home, I had 3 weeks of TDY, or temporary duty, to red flag, and then I was up at Alaska, and then I—and I am—you know, 12 hours a day in the squadron when I am training here, and I missed the last three birthdays of my kids. Can I continue to do this? Can my family continue to do this?

And so it gets to that point in life where some people are finding it difficult to keep that balance, and that is what we hear the most.

Mr. ROGERS. Thank you.

Ms. GRANGER. Thank you.

Mr. Ryan.

ADDITIVE MANUFACTURING INSTITUTE

Mr. RYAN. Thank you, Madam Chair.

So I want to talk about the Additive Manufacturing Institute in Youngstown and just share with you and the committee some of the things that have been going on, and the—America Makes is the name of the institute in Youngstown, Ohio.

This was one of President Obama's initiatives where he wanted to start 30 or 40 of these institutes to bring public/private sector investment into newer technologies that could help in the area of defense in particular to bring down the cost, improve lead times.

So we have the 910th Airlift Wing Reserve Unit that does the aerial spray in Youngstown; they are obviously a part of this. And through America Makes and through some of the research, this team has significantly reduced fabrication lead times and proved to be a huge benefit to the Air Force.

In the case of the 910th Airlift Wing, the lead time for parts was reduced from 10 weeks to 4 weeks, and the cost per part was reduced by 30 percent. They are now moving onto F-18s and F-15s. They have three areas that they are working on: bellcranks, aircraft oil coolers, and fairings.

Now, I am learning about this as we go, but for the example for the bellcranks, 30 percent reduction in lead time they are thinking they are going to get and 20 percent cost reduction.

For the aircraft oil coolers, 30 percent reduction in lead time and improved productivity are expected. And for the fairings, which help smooth flight surfaces with good aerodynamics, they think

they are going to reduce production time by up to 50 percent with a 30-percent cost savings.

So this is the exact kind of thing I would hope we all could agree to keep investing in because it is reducing cost, improving lead times for these spare parts where we don't need necessarily a million of them; you may just need a few of them.

So I want to thank you for supporting this and just ask you a question. The other point I would like to make is, when you see who is doing the research—so, for example, with the bellcranks, it is Youngstown State University, Pennsylvania State University, Lockheed Martin, Boeing, Youngstown Business Incubator, M7 Technologies—it is truly public/private partnerships in local communities. It also has a local economic benefit for us as well.

So the question is, how is the Air Force developing this expertise to apply additive manufacturing in these other emerging advanced technologies for continued effective maintenance and sustainment of the legacy aircraft? And what steps are being taken with current or future contracts to allow Air Force access to the electronic design files that we would need?

I know, Madam Secretary, we talked about that, so if you could just address those two questions.

Ms. WILSON. Congressman, first of all, the Air Force is very interested in additive manufacturing and 3D printing of parts for a couple of reasons: One is the logistics problem is much less. If you can just take the raw material and build the part where you are rather than trying to have to go back to a supplier.

Second is so many of the suppliers are no longer in business. I mean, you think about it: The A-10, the prime contractor doesn't even exist anymore, and we often have difficulty finding parts.

You highlight the issue, and it may be an area where we need help from Congress, and that has to do with intellectual property. If we need a new handle or a fairing on an aircraft and the supplier is no longer in business and we can't get somebody to make the part for us, we don't always have the intellectual property to be able to do it.

Now, we might be able to scan an old part and be able to use that, but the manufacturer may say, you know, we no longer make those, but we still hold the IP. This will be an increasingly contentious issue on contract negotiations going forward, but we also have huge numbers of legacy aircraft.

If we want to drive down the cost of the Air Force and what we spend in terms of equipment, we really have to focus on sustainment. And it is going to be an area of increased emphasis. We had a meeting about it yesterday with our new Assistant Secretary for Acquisition, and we are looking at really, really moving forward in this area in a fast—in a very rapid way.

Mr. RYAN. Great.

Just so everybody is aware, so the—it is like a 3D printer that you have heard of. And it sits—the desktop style can sit on your desk and print the back of your case. They just get the material and it pumps into the, what looks like a printer—it is a printer, and it just prints. But they also have industrial-sized one that can print parts for aerospace and all kinds of cool things.

But this is a game changer for us. And when I was in Kuwait last year, they had 3D printers, and it was the same thing, right in the middle of the base where they are printing this stuff out for smaller things.

But we have got to solve this intellectual property issue so that we can access this stuff and be able to print these parts and save the government and the taxpayer a lot of money and get good quality parts for our planes and other aircraft and stuff.

So thank you. Yield back.
Ms. GRANGER. Mr. Calvert.

EVOLVED EXPENDABLE LAUNCH VEHICLE PROGRAM

Mr. CALVERT. Thank you, Madam Chairman.

Secretary Wilson, General Goldfein, thank you for being here, and thank you for your service to the country.

As the committee knows, I have a particular interest in space, both in terms of access and maintaining superiority. I was pleased the Air Force has finally moved toward competition in space, and we see the costs are coming down. A few questions on launching capability—I have three—and then if you please could answer them.

Can you give us an update on the Evolved Expendable Launch Vehicle program, the Air Force pursuit of two launched systems that will provide assured access to space while incorporating competition to keep costs down?

SUPERIORITY IN SPACE

Two, while we build that capability, our adversaries in space are aggressively pursuing technologies to erode our superiority in space, as was mentioned. What steps are you taking to enable the Air Force to move more quickly with innovators in the private sector to win this contest?

And, finally, considering the Air Force's past resistance to change in the status quo—I always think of the UAVs and the Air Force's slow movement into that technology—how are you pushing your workforce to aggressively pursue disruptive technologies and incorporate a new way of thinking?

Ms. WILSON. Congressman, a couple of things. One of the things you may have noted in the press from our space acquisition arm, which is in Los Angeles, we led a \$100 million contract for innovation in space. It is a consortium. We did it with other transaction authorities to be able to work with companies who wouldn't normally work with the Air Force, because we are often bureaucratic to work with.

We are also moving forward with actually a significant realignment and reorganization of Space and Missile Systems Command out of Los Angeles to be able to move faster in order to innovate, to prototype, and do a variety of things.

I think this budget on—particularly on space, there are so many different things that are over the 5-year period on space in this budget, but let me highlight a couple of them.

Space situational awareness: We are accelerating our ground-based optical sensor system, our deep-space advanced radar system, and our next generation space surveillance satellite.

With respect to missile warning, we chose to cancel space-based infrared 7 and 8, which were large and largely undefendable, and to accelerate to next generation missile warning with smaller sensors on a large bus so that they can have extra fuel, and what we might generally call chaff and flares, to be able to defend missile warning on orbit.

We have a number of areas, what we would call, space control, and be happy to come back. And I know the chairwoman has talked about showing you one of our space exercises in classified session so that you can see what you are seeing, what we project, and then what we have done about it in our budget to be able to defend in space.

Chief, do you want to talk about the ELV and some other things.
General GOLDFEIN. Yes, ma'am.

So, sir, you know, the direction we were given by Congress was really to accomplish three things during a transition period to do the following: First, to ensure that we had assured access to all the orbitology for any platform that we had to pick up into low or high or geosynchronous orbit; and while we did this transition, that we would come out the back end with two domestic competitors that would be able to provide launch services; and on the third was, as quickly as possible, get off of the Russian RD-180 engine. That was the direction we were given. And, right now, we are on track with all three of those to be able to complete the transition period, come out the back end with two domestic launch service providers.

We have four other transaction agreements right now. We are working with four companies who are looking at propulsion systems, because as you know, when we started down this path, we were not actually looking to build a new engine. We were looking to contract a launch service.

And I will just share that, you know, on the most recent launch of the SpaceX, the Delta Heavy, we were side by side with SpaceX with which—with a whole team of airmen during that launch. And that is just an example of how we have done this, you know, public/private, work together to ensure that we come out the back end and achieve what Congress told us to do.

Mr. CALVERT. Thank you.

I would just point out that nowadays, it seems the private sector is, almost in every instance, is moving faster than government in innovation and new technologies. And I think today we just have to keep up with what they are doing and try to incorporate that into new weapons systems as we move forward and do a better job of accepting those technologies and dealing with it.

So thank you, Madam Chair.

Ms. GRANGER. Thank you.

Mr. Cuellar.

SUTHERLAND SPRINGS

Mr. CUELLAR. Thank you, Madam Chair.

Sutherland Springs, as you know, it is in my district, and I know that you all have been working on improving the reporting. Can you tell us where we are on that particular situation and what you understand the Department is doing across the board also, besides the Air Force?

Ms. WILSON. Congressman, we stood up two task forces to scrub all of the Air Force records back to 2002, two task forces of 30 airmen. They have been full time on scrubbing those records since the incident in Texas.

It is actually taking longer than we expected to do—than we expected it to do. We have over 100,000 records that we have already reviewed back to 2002. As we identify those that should have been reported, we are working with the FBI to report them.

At the same time, we are working with the other services so that we are sharing our lessons learned with the other services. And we are trying to fix processes and training going forward.

So we are—in addition to doing that, fixes and processes and training, we sent the auditors out to each of our MAJCOMS and took no-notice inspections after the training was over for two bases in each MAJCOM to see, all right, is the training sticking, and if not, what is our next step to do additional training to make sure that, going forward, we don't have a reporting problem?

I will say that it is taking us longer—initially, we thought we could get through all the records by May. It is actually taking us longer to get through all of those records looking backwards. So it is probably going to take us another 4 or 5 months to get through everything and try to close out every case.

PILOT SHORTAGE

Mr. CUELLAR. Okay. Appreciate it if you all just keep me in the loop as to where we are.

Let me see. Let me just ask you a little bit, the same question, I think, everybody has been asking about pilots, the shortage. I think we are, what, 1 out of 10 short. What specifically did you ask in your budget to address this issue?

Because if you look at it, we are short, and Border Patrol—I think we are losing more Border Patrol than hiring Border Patrol. We are short in Secret Service. I mean, everybody is having a hard time because we know the demographics, a certain population is getting older and retiring.

But what specifically—I know we have all been talking, but I want to know specifically, what are you asking that will be different from what other predecessors have done?

Ms. WILSON. Sir, there is a couple of things: One is, we are increasing the number of people who are going through initial pilot training, so bring in more people. We actually don't have a shortage of people who want to come into the service to be Air Force pilots.

We then have to absorb them and train them up in the squadrons. That is actually one of the limiting factors. You know, we are particularly short fighter pilots. We only have 56 fighter squadrons. You can imagine that if a fighter squadron has half of its people who are brandnew pilots, it is hard to season them. It is hard to train them and absorb them. So that is a limiting factor.

And then it is retention, and retention really is an everyday thing. It is not just at the 10-year point when they are wondering whether they are going to stay or leave. And the chief talked about some of our initiatives. There really are over 60 of them, everything from, you know, do we allow more flexibility and more control

of schedules and lives so that you can choose to stay at your same base or you will take a remote and come back.

We have reduced the number of pilot requirements that are forward, scrubbed every requirement that said we need a rated officer on a staff at Central Command, for example. Do we really need a rated officer for that? We have taken some of our 365-day tours and said, can they be 180-day tours?

So there is a variety of things that we have done. And then, of course, there are pilot bonuses that try to narrow some of the gap between what the airlines can offer and what a pilot makes for pay, but we also have to recognize: It is not about the pay; it is about the quality of service, the quality of life.

Mr. CUELLAR. All right.

General GOLDFEIN. Sir, if I could——

Mr. CUELLAR. And I will—well, go ahead, and then I want to give my extra time to Mario. No. I am just kidding.

Yes.

General GOLDFEIN. Sir, just to add to the Secretary's point, you know, part of what Congress can do as well is the recognition that this is a national level challenge. The problem that we are finding ourselves in is that we, as a Nation, don't produce the number of pilots to adequately service at the same time commercial, business, and military aviation.

And so, in each of your States, there are colleges and universities that are actually in the business of producing pilots. Any incentives that this committee or Members of Congress can put in place that could increase the numbers, that is going to help the overall challenge we have.

Mr. CUELLAR. Well, if you can give us some ideas, because—I know my time is over. But even in Homeland, Air Marine is short, Chairman Carter. So, I mean, we are just short on pilots. So, if you have any specific ideas to work on this pipeline because it is a recruitment and then the retention, but any specific ideas, let us know.

Thank you, Madam Chair.

Ms. GRANGER. Thank you.

Mr. Diaz-Balart.

LIGHT ATTACK AIRCRAFT

Mr. DIAZ-BALART. Madam Chair, thank you very much.

And, Henry, thanks for remembering that.

General, thanks for a lifetime of service to our country.

And those of us who have had the privilege of working with and knowing Secretary Wilson know that there is nobody who is tougher, who is more thoughtful, who is more honorable, who is more straight than this Secretary. So I think all of us were very pleased that the President made a great, great choice.

Ms. WILSON. I bought your coffee this morning.

Mr. DIAZ-BALART. I want to go a little bit about—talk a little bit about the light attack aircraft. And so, in the final report on the experimental phase, my understanding is, last month, that it went really smoothly and that things went well.

But I understand that the light attack procurement is not funded in fiscal year 2019, and so, even though the experiment is set to

take place in 2018, so I think it would be helpful, and I think the committee would like to have an idea as to, you know, schedules and funding plan for this new mission and how it will potentially drive down flying hours and cost and potentially even pilot retention.

So can you talk a little about the next phase of the experiment and what that will look like?

Ms. WILSON. Yes, sir, I can.

First of all, you know, kudos to the chief. Before I arrived, he signed out a memo that said we want to do an experiment, signed it out on the 5th of March. It was one-page long. We added four pages of explanation. So that was the length of this request for proposal, five pages, and said we want to look at light attack aircraft. That was in March.

By August of last year—so 5 months?—5 months we had a—four aircraft on the ramp at Holloman Air Force Base in New Mexico to test. This is the way the Air Force should be doing things, and we were able to do that because you gave us the authority to experiment. Just try it. We don't have a program of record.

We got the first report. We are now taking two aircraft, the AT-6 and the A-29, and we are going to do some additional experimentation this year. We put a wedge in our budget of \$2.4 billion for the United States to buy light attack aircraft and create some squadrons.

I have to tell you, depending on how this experiment goes, we may want to work with you on moving that money around in the 5-year defense plan, but we put a wedge in there to do that.

If we decide to move forward, I think we should move forward quickly, and we will work together with Congress to get the necessary authorizations and the plan that makes sense to do the acquisition.

We believe that this needs to be coalition at the core. By that, I mean we are already reaching out to allies and partners who may want to purchase their own light attack aircraft and be interoperable with the United States of America. This is all part of a strategy to deal with the prospect of continued violent extremism at lower levels of U.S. effort with cost-effective aircraft but also doing it with allies and partners. So it is aligned with the National Defense Strategy, and it is one other way in which our fiscal year 2019 budget and plan is well aligned with the National Defense Strategy.

Now, I have to say: I got the short straw. The chief got to fly one of them when we were out in New Mexico, so you want to add anything, sir?

General GOLDFEIN. Ma'am, I think you hit it exactly right. The big idea here—because we often will get a question, is this replacing this, is this replacing that—this is directly tied to building competitive space in a new era of air competition to allow us to build the partners and the—allies and partners in their capacity to be able to drive this violence down to a point where it can be managed in individual countries.

And so, when you think light attack—the Secretary said it exactly right—think allies and partners, because that is the big idea.

Mr. DIAZ-BALART. Actually, I see my time is winding up, so maybe in a second round. I yield back, Madam Chair.

Ms. GRANGER. Thank you.

Mr. Ruppersberger.

Mr. RUPPERSBERGER. First, Secretary Wilson, welcome back. We worked together in Intel on a lot of these issues, and I will take a dinner instead of coffee—

Ms. WILSON. Deal.

JSTARS

Mr. RUPPERSBERGER. The fiscal year 2019 budget submission funding about JSTARS, that you are going to eliminate that program, I understand at least part of the plan that the Air Force is discussing to replace JSTARS is the use of smaller network systems of sensors.

However, as you know, there has already been significant Federal investment in the JSTARS recap program, especially in terms of the ground-moving target indicators, which is called GMTI—and I think, General Goldfein, you probably would answer this—system, which is a radar system.

And, additionally, General Holmes of Air Combat Command recently stated that the GMTI radar was modular and had uses in the future. I have two questions: First, what is the Air Force plan for continuing to leverage the significant investment already made in the development of the GMTI radar system that the Air Force selected for the JSTARS recap program? And, two, given this modularity and open architecture, can you share your thoughts on how the previous investment made to this radar could be used in the new JSTARS plan?

General GOLDFEIN. Yes, sir. Thanks for the question.

You know, I think it is important for the—to set the foundation, first, on the platform we are talking about, the Joint STARS aircraft, it was actually a test aircraft that was brought into being during Desert Shield to give a sense of what the ground maneuver was as Saddam Hussein was maneuvering his forces.

And at the time, Captain Dave Goldfein was deployed to the Middle East for Desert Shield and then Desert Storm. And recently—and Dr. Wilson at the time was a recently graduated Rhodes Scholar who was working on President Bush's national security team.

When we brought that weapons system on in 1990 to perform in 1991, you know, if you just think about it, we were still years away from even cellphone technology, let alone what we know today in terms of the internet and everything else we have. It has performed brilliantly over the years.

And I will tell you: In 2011 to 2013, I employed Joint STARS in the surge in Afghanistan and in the withdrawal in Iraq. And once again, we needed to know what was going on on the ground and how do we manage the battle.

The challenge is, if we had taken that same scenario and put it into a European scenario, any soldier, sailor, airmen, and marines who were actually on the ground wanting to know enemy activity in a contested environment would have been blind to enemy movement. Because we were part of the build of the National Defense Strategy, Secretary Wilson and I had the ability to continue to look

at our budget throughout the building of that strategy to see where we were aligned and where we were possibly not aligned.

As the strategy came together on focusing on peer competition, it became very clear to us that the recapitalization plan and the investment that we were making in a platform-to-platform solution would not survive in a contested environment. So we are choosing a different pathway.

One of the most important things that allowed us to change this is our ability to fly the current Joint STARS longer than we thought we could because we did a deep dive. That gives us the time to actually look at an alternative approach to the future.

Specific to your question, how do we leverage the investment that we have already made, we are going to use that investment and look at that technology growth across the system of sensors that we now have available to us that are coming from all domains and looking how we fuse that so we won't lose that investment.

SPACE

Mr. RUPPERSBERGER. Real quick, because I am going to have to leave, but on space. You know, we are having some issues with Russia and China, and it is getting more dangerous, and we used to dominate. Now it is a lot different.

Two questions: Have you looked to ensure the American space assets are still resilient and reliable? What do you believe are our greatest vulnerabilities? And, two, if there were any additional resources available, how would you prioritize the allocation to deal with these vulnerabilities?

Ms. WILSON. Congressman, with respect to the threat that we face, I think—without going into too much detail, I think it is everything from jamming from the surface or a cyber attack to direct-ascent satellite weapons, either from Russia. And as you well know, when we were on the committee together, in 2007, they tested—the Chinese tested an antisatellite weapon and spread debris all over orbit.

So I think the challenges and risks are those. I think this budget that we have proposed in front of you today does a whole variety of things, but one of them is moving faster towards the jam-proof GPS. So we are moving to the next generation of GPS.

And if you think about it, GPS—the Air Force operates 30 satellites in orbit just for GPS. We have about 76 satellites total, about three of them are GPS. And since 1992, the Air Force has been supplying GPS, paid for by the taxpayers, but to the users for free.

So, if you, you know, got here to this hearing today by Uber or if you looked on Yelp last night for the restaurant nearby you, or if you just take out your phone and look at that blue dot, or if you got money from an ATM machine, all of the services, all of those services are provided by a squadron of less than 40 airmen in Colorado Springs, Colorado. We provide GPS to the world, to about a billion people every day. It is a pretty amazing capability. And we are going to keep it resilient for the long term.

Ms. GRANGER. Mr. Cole.

SUSTAINMENT SYSTEM

Mr. COLE. Thank you, Madam Chairman.

And let me echo everybody's pleasure, Madam Secretary, at seeing you in your spot. I mean, none of us, on either side of the aisle, could have been more pleased. And certainly all of us that had the privilege of serving with you are delighted with the President's choice.

I want to focus a little bit on an area that we don't spend enough time on although, my friend, Mr. Ryan, actually touched on some of this a moment ago. We spend a lot of time talking about a procurement and not a lot of time talking about sustainment, and the cost balance there is pretty great.

So I would like to pick your brain a little bit and see what you are thinking about how we will keep the, frankly, excellent sustainment system we have and some things we can do to improve on it.

I mean, you look at that workforce. It is an old workforce. A lot of them are like my dad, did 20 years in the Air Force and then 20 years at Tinker Air Force Base, so you always have a lot of pretty senior people that are within a few years of retirement.

And every time we get a hiring freeze, I know what that does at Tinker Air Force Base to General Levy and just trying to maintain the workforce that he does to turn around these aircraft. So please give us some of your thoughts on what we can do to keep sustainment costs low and keep that workforce, which does such great things for us, intact.

Ms. WILSON. Thank you, Congressman.

One of the things to start out with is this budget fund sustainment to 90 percent, and that means about \$15.1 billion in this fiscal year alone. You are also correct that one of the things that helps most with our civilian workforce is certainty on the budget.

When the Air Force went through sequester several years ago, we lost 30,000 people in the wake of sequester and the reduction of the size of the force, but we also had a lot of civilians who were told not to come to work next week. And that furlough of civilians had a terrible effect on morale and the feeling of being part of the team. And I think you probably saw that pretty clearly at Tinker.

I do think that there is a huge amount of cost in sustainment, and we probably haven't looked enough—and Congressman Ryan mentioned it—as a priority on, how do we drive down the cost of sustainment by taking advantage of new technologies and, particularly, advanced manufacturing? And I think there is a tremendous opportunity there, and it is going to be a real priority for us going forward.

INTELLECTUAL PROPERTY

Mr. COLE. Well, I do too. And I agree very much with what my friend from Ohio had to say on that point.

I would also ask you to pick up on the point he also made about the intellectual property as we are negotiating to procure it because getting the right to that is such a critical factor in keeping down the cost. And, you know, we are retaining airplanes that, as

you pointed out in your own testimony, look, we don't even have the original contractors anymore. I mean, we are still running KC-135s, 400 of them plus, through Tinker.

We are happy to do the work, but it is not predictable work anymore, and they literally have to—it is almost like artisan work. They have to literally strip it down and see, because they don't have any studies that tell you how long the metal is going to last and everything.

So, if we don't own the ability, the right, if you will, when we procure that to reproduce that product at a reasonable cost, it is just going to drive the cost through the roof.

So I would ask you, as you negotiate for a new weapons system, that we keep that in mind that you are negotiating for the intellectual property as well and you put that in our hands, since we are paying a lot of money for it, so that we can sustain those airplanes.

General GOLDFEIN. Sir, can I just add too that I give Secretary Wilson a lot of credit for—especially coming out of being president of a major STEM university to look at our labs and our science and technology and our research. And one of the things that you are going to see in our budget is a significant increase in what we are doing in the business of science and technology, how do we get things faster from the lab bench to the flight line?

PARTNERSHIPS WITH CAREER TECH INSTITUTIONS

Mr. COLE. The other thing I would ask you to look at—and, actually, Tinker is an excellent example. Again, they have built partnerships with our career tech institutions and with our higher ed institutions to try and let them know years ahead of time, okay, these are the kind of skills we need, these are the sorts of people that we want, so that there is tremendous opportunity there, and, frankly, increasing competition. When I was—20, 30 years ago, we didn't have anywhere near the number of contractors in the immediate vicinity of Tinker Air Force Base that we have today. And they are in competition with that base, obviously appropriately, for very skilled people. I mean, I think Tinker alone can hire almost every software engineer the University of Oklahoma and Oklahoma State produce right now, and they are competing with really good competitors at Boeing and at Northrop Grumman and what have you. So that—thinking ahead, we are thinking a lot about pilots; we need to think about a lot about engineers and a lot about maintainers as well.

Ms. WILSON. Congressman, though, let me just add a couple of things. With respect to maintainers, we are actually doing much better. We were really short of them 3 years ago, and now we are not quite so short although they are now apprentices and we have got to get them to be craftsmen and to be masters.

With respect to engineers—hiring engineers and scientists and cooperation with universities, one of the things we also lost in the wake of sequester was the summer intern program, which is really the only way you are going to get an engineer or scientist right out of school is through internships, because they are in such demand.

This summer, for the first time in many years, the Air Force has restarted its internship program. We now have 431 summer in-

terns so far that have signed up to be with the Air Force, three quarters of them engineers and scientists.

We are working—and it is more of a localized issue—on, how do we get the tradesmen who are the craftsmen who are machinists and tool people? And we are working that issue as well, trying to partner with more local higher ed institutions.

Mr. COLE. Thank you, Madam Chairman.

Ms. GRANGER. Thank you.

Mr. Aderholt.

DIRECTED ENERGY AND LASERS

Mr. ADERHOLT. Thank you, Secretary Wilson, for being here. Good to have you back here on the House side, as has already been mentioned, and thanks for your recent visit to the office. We enjoyed our visit.

General, good to have you here as well.

We have been very interested in laser work in the U.S. military, and I just wanted to ask your opinion about whether you think that the budget meets that challenge that we have with the work that we are looking at.

Ms. WILSON. Let me make sure I heard the word right. Directed energy, lasers?

Mr. ADERHOLT. Lasers, yes.

Ms. WILSON. Yes, sir.

First of all, there is money in the budget for lasers, particularly several different tests that we are doing with lasers, and directed energy generally. And I will ask maybe the chief to elaborate a little bit.

But we are also doing a—we launched a year-long review of the science and technology strategy for the Air Force to identify areas of high priority for the Air Force to do research in and also look at the way in which we conduct our research, as a lot of it had moved to be internal and not in partnership with industry or higher education.

I would also say that the three service secretaries, we get together every other week for breakfast now, and—

Mr. ADERHOLT. Which you mentioned was a new thing, that—

Ms. WILSON. It is. It is. It is terrifying the staff. But one of the first issues we focused on was our research and development portfolios: What are the other services doing? What are we doing?

One of the areas that we identified where we want to look at what each other are doing and how we can leverage each other's success or fill in gaps was directed energy.

Mr. ADERHOLT. General, if you could continue.

General GOLDFEIN. Yes, sir. I will just add that, in parallel to the service secretaries meeting, we are at this point in our history where every one of the Joint Chiefs, you know, we fought together, and we all grew up under this guy named General Mattis. So the camaraderie and the dialogues that are happening at both the service secretary level and at both the Joint Chief level, and I give General Dunford a lot of credit for how he has pulled this team together.

We are looking at our levels in investment in places like directed energy, hypersonics, quantum computing, all those game changers,

and looking for ways to ensure that we can put the most resources against the problem so we can swarm against the problem with the resources available and get the best possible end state coming out of that.

I think Dr. Griffin met with him this week. This was a part of our discussion. He grew up in the labs. He understands how they work. I think he is going to be very helpful in this dialogue, so I think the conversations we are having are very helpful.

ELV LAUNCH SERVICE AGREEMENT

Mr. ADERHOLT. Okay. Let me jump off to my next question since time is limited. We talked a little bit about the ELV launch service agreement, and thank you for giving us an update about the status of that. Just—the bottom line is just, is there sufficient funding to keep up with the schedule that you are on now?

Ms. WILSON. Yes, sir, we think there is.

Mr. ADERHOLT. And, I guess, one of the—another question I have, if one of the providers decides for some reason that it decides to get out of the launch business after fulfilling the contract, what rights are secured for the government to continue using that launch vehicle?

General GOLDFEIN. It is actually written into the contract that there is a fee associated with not competing for launch, so we have thought through that in terms of how we constructed the contract.

And we have written into the contracts as well ownership of data rights to ensure that we have more control over the actual data and the IP, the intellectual property, as we go forward, so we did think through that.

Ms. WILSON. Sir, if I could just add one thing. You know, back in the 1990s and 2000s, we were thinking, what the heck are we going to do? We have got to keep national access to space, and the launch industry had collapsed, and how are we going to recover.

I have to give credit to predecessors and their ability to work with industry to develop and support a competitive launch industry. And it is now not just dependent on the U.S. Government. And the cost of launch is plummeting. You have multiple choices. And the size of payloads is also going down.

So we are getting to a point where the cost of launch is enabling business plans to close in space that never were possible before. The result is we are getting more and more launches because—and that keeps the price going down.

This next year—last year, I think, we had 29 space launches that we did out of the Cape. It is an Air Force-operated facility. We were driving to 48 launches a year, and the Air Force is changing the way in which we partner with industry to enable American leadership in space launch. And it is really kind of an exciting time.

Mr. ADERHOLT. Thanks, Madam Chair.

Ms. GRANGER. Thank you.

Mr. Carter.

A-10 AIRCRAFT AND CLOSE GROUND SUPPORT

Mr. CARTER. Thank you, Madam Chair.
And thank you both for being here.

Secretary Wilson, really pleased to see you. You were a source of information for me when we were Members of Congress together. I learned a lot from you, and I want to thank you for that, back when I was young and stupid. Still may be.

Okay. I got Fort Hood in my district. I am about ground forces. And two sergeant majors that have served in my office have told me that the most welcoming sight to any soldier in a really bad fight is an A-10 on the horizon, that close air support is—it puts a smile on every soldier's face and every marine's face.

That being said, let's look at the future of close air support. What does it look like in this more contested environment we are in? We are now in a global war on terror, and in addition, we are pivoting over to great power competition.

What is the future of aircraft use for close ground support? Can you talk about the efficiencies of how we match our close air support capabilities to the enemy we face, both now and the one we are thinking about?

Ms. WILSON. Sir, let me start out and then I will let the chief fill in. But with respect to the A-10, the fiscal year 2018 budget, which I think you all are trying to wrap up, would restart the line for redoing the wings of the A-10 and would buy probably the first four sets of wings for re-winging, in addition to the 174 or so that are already done.

And then the fiscal year 2019 budget has \$80 million in it for more wings. Now, well, that gets you somewhere between 8 and 12 probably. So the A-10 is expected to stay in the inventory through 2030.

In addition to that, and it is really—you know, this is one of the things that has really changed since I was a young officer in the Air Force in the 1980s, is that we can do close air support off of a variety of platforms. So it could be off of an unmanned platform. It could be off of a—you know, we are doing close air support off of aircraft that were never intended to be anything other than strategic aircraft.

But I would absolutely agree with you, the sound of those whining engines on the A-10 is welcome to those on the ground, and it is one of the things we take seriously. The last time an American soldier or Marine was killed on the ground by enemy aircraft, the last time was April 15, 1953. That was a long time ago. And so, as the chief likes to say, whenever an American soldier or Marine hears jet noise, we want them to not even look up because they know it is us.

General GOLDFEIN. Sir, it'd be helpful if those sergeant majors know that this chief has been fighting side by side with the Army my entire career, and this is nothing short of a moral obligation.

Let me just give you a vignette to put in perspective perhaps what the Secretary talked about in terms of how we mask different kinds of capabilities to ensure that we have the right attributes over the battle space to be able to support the ground force commander.

So, as the air component commander during the surge in Afghanistan, we divided Afghanistan into regional commands. And in each of the commands, there was a different terrain and there was a different scheme of maneuver that required different attributes that

then I would place overhead to support the ground force commander.

In RC South, Regional Command South, there was really flat terrain, and so I needed something that had persistence over the battle space that—and so, you know, I would really heavily push, you know, MQ-9 Reapers over the top of that battle space.

And RCEs in the north, very heavily mountainous terrain, optimized for being able to get into those valleys, and so an A-10 was absolutely spectacular. At an RC West, because of the distances that were involved and because of the range of weapons I needed, a B-1 was perfect for RC West. And then I would have F-15Es that I would place in RC South.

If I had gone to those ground force commanders and said, "Hey, listen, I am going to pull the A-10s out of here and place them over here," they would tell me the attributes are misaligned. So part of what an airmen does is we understand the ground force scheme of maneuver and what we are trying to accomplish and then we place the right asset or family of systems overhead to be able to provide the fires, because when you are on the ground and you require the air components, every second counts. And I want to make sure that when that call comes, that we are there and that they hear jet noise; they know it is the sound of freedom coming to help them.

Mr. CARTER. And thank you very much for that description of how you map out what you have to do. That is very helpful. And I hope we can keep that date you have given us into the great and future battles, all the battles we have.

And you do a wonderful job of air support for our ground forces, and they really do appreciate it. They are very proud of the fact that the Air Force is up there for them, believe me, and they tell me that all the time.

So thank you for what you do on behalf of Fort Hood.

Ms. GRANGER. Mrs. Roby.

PROFESSIONAL MILITARY EDUCATION

Mrs. ROBY. Thank you so much, Madam Chair.

And, Secretary Wilson and General Goldfein, thank you so much for your leadership, for being here with us today.

Let me start by just saying that the men and women of the 187th in Montgomery, Alabama, could not be more thrilled for the extraordinary opportunity that you have given them to host the F-35 mission in a few short years from now. But thank you for recognizing their professionalism and their capability. And the River Region in the State of Alabama is very, very excited about this opportunity. So thank you for that.

Let me also say, Secretary Wilson, thank you so much for the time that you spent in my office yesterday. We covered a lot of ground, and I appreciate your taking the time to speak to George, my son. So thank you for that. You were big, big hits on Instagram yesterday—you were a big hit on Instagram yesterday.

So, look, I just want to bring a few things up and then I will let both of you respond. I mean, of course, our State and particularly Alabama's Second District shares a very close relationship with the United States Air Force. We have a large footprint, as you know.

And things that are important to me that I would like for you to touch on as far as the budget is concerned, a couple of things: rotary wing training, of course, at Rucker. We talked about this a little bit yesterday. Just want to let you know that it is on our radar, and we are watching it, and we would love to have any additional information. I know you are in the initial stages of taking a look at that, but just want to stay informed about any decisions or information that pertains to that moving forward.

Professional military education, we talk about a lot of shiny objects in this room, and PME often gets left out of the discussion. I am going to take this opportunity every time to bring it up. It is very important to what our military looks like in the many years to come.

And so I don't ever want it to get glossed over that professional military education is such an important component of what we do. And so many of you in this room have come through Maxwell and Air University and the War College and all of the other educational components that exist there.

STAR-BASED PROGRAM

I do want to touch on one thing in light of a question about STEM education. The STAR-based program at Maxwell is so great. It is a coordination with the public school system in the River Region to bring elementary school-age children to Maxwell for a course to expose them at an early age. This is something that the Department of Defense is doing across all—Fort Rucker has a similar program in the summertime for underserved communities.

So I just want—I want to just bring that up because I know it is something that is dear to you, and we appreciate the partnership at home. So professional military education, the rotary wing component at Fort Rucker, and then also the information technology at the Gunter Annex.

We have talked about in this room as well the fact that IT and cyber moves at such a fast pace; sometimes the appropriations process doesn't keep up with the changes in technology. And so I would love for you to talk about those things for the committee.

But, again, let me just say this and then I will be quiet: Thank you to you and your families for your service and sacrifice. It certainly means a lot, your dedication to our country and to the Air Force. We really just appreciate it. So thank you all, both, for being here today.

Ms. WILSON. Thank you, Congresswoman.

I will start out on a couple of things. First, with respect to professional military education, of course, and everything that we do in Montgomery and beyond, one of our obligations and major goals is to develop exceptional leaders to lead the world's most powerful teams. And a lot of that is done through professional military education, and we are deeply committed to it.

With respect to Fort Rucker and training, we have sent out a request for information. It has to do with how do we train helicopter pilots, and it gets back to, you know, the pilot shortage. All right, if we are going to train 1,400 fixed-wing pilots, do we somehow separate out how we start out helicopter pilots so they don't start out in the same flow so that we can use that to expand the pipeline

even further. So we are just at the information-gathering stage with respect to that.

I will let the chief expand on some of the others. But I will just say that, while we make decisions based on basing, based on the criteria that we set, and we try to be very open with everyone and just, you know, note them on the scales, just make the best decision we can for the Air Force and for the mission, it was a great pleasure to make sure that the 187th, the famed red tails of the Tuskegee Airmen will have some F-35s to put some red tails on. Thanks.

Ms. GRANGER. Thank you.

We will now go—it will be Graves, Frelinghuysen, then Visclosky.

JSTARS RECAP PROGRAM

Mr. GRAVES. Thank you, Madam Chair. And thanks again for being here with us today, for your clear and direct responses to a lot of questions. I know—I appreciate you touching on the JSTARS recap program.

We have had robust discussions about that here many, many times, and so I have one quick just sort of followup on that. And it is really on behalf of one of my colleagues, Austin Scott, who has just been a phenomenal champion for the Robins Air Force Base in Warner Robins, Georgia, which JSTARS are hosted now.

And but there has been some, I don't know, discussions, we understand, within the Pentagon that there are still openness or combatant commanders still want this type of platform manned. Can you confirm whether or not there is still open discussions about this? Or is it truly closed out and moving onto the additional options that you spoke of earlier?

General GOLDFEIN. Sir, I will just tell you that, as we go down this path, the opening conversations I had was, first of all, with my fellow Joint Chiefs, specifically Chief of Staff of the Army Mark Milley and Commandant of the Marine Corps Bob Neller to make sure that they understand because they are going to have to explain it to their force, right, that this is not in any way, shape, or form the United States backing an inch off of supporting them.

The challenge we have with the current recap is that, if their marines and soldiers and our airmen, who are often embedded with them, are in any kind of a contested environment, they will be blind to enemy activity with what the previous plan was, and we can't go there.

So the dialogues we are having—and I had conversations this week with General Scaparrotti, General Votel, General Waldhauser—I am having with each of the combatant commanders, and everyone I talk to, as I explain it and lay it out for them, they see the value of the new approach we are taking because it is going to help them in all of the potential conflicts and the operational plans they are responsible for.

Ms. WILSON. Sir, I would just add to that: What a combatant commander wants is eyes on. They don't care where it comes from. So it doesn't really—I think it is not about the platform that it is on or where it comes from.

In fact, you know, when you are listening to the radio—the chief and I were forward in the Central Command area authority; we were in Iraq on the morning that the Tal Afar battle kicked off, and we were in the tactical operations center. People talking on the radios, you have no idea whether whoever is talking to you on the radio is in AWACS or JSTARS or on the ground. You have no clue. So what they need is the information and the site picture about what is going on on the ground so that they can win. They don't really care what platform it came off of.

Mr. GRAVES. Right. And I don't disagree. You are absolutely right.

One quick additional question, and maybe you could, before you answer the additional question, just describe the difference between contested and noncontested, and will the new platform you are discussing or options take care of the noncontested arenas as well?

The subcommittee has been very supportive of Compass Call, the crossdeck program. And, yet, the current plan that you proposed in 2019 shows a replacement rate of one airframe per year.

Can you help us understand, would there be additional savings to this subcommittee and your efforts if we did two airframes per year? And if you could just give a little description. Should we be doing more, or is one sufficient?

Ms. WILSON. Sir, if I could take that one for the record, I will go back and look at what the schedule is and so forth.

Mr. GRAVES. Okay.

Ms. WILSON. Unless, Chief, you know and can bail me out?

[CLERK'S NOTE.—The Air Force is working directly with Mr. Grave's office to address this question on the topic of Compass Call.]

General GOLDFEIN. No, because the one-per-year is actually not tracking. So I just want to make sure we have—if we can take that one for the record to make sure that we have exactly what the schedule is, we will come back to you.

Very quickly, contested versus uncontested: Uncontested would be very much like the Middle East, where I can actually place any aircraft I have in the inventory anywhere I want and fly it for as long as I want because there is nothing that can actually take it out or threaten it. That is the uncontested environment that we have enjoyed for the most part in the Middle East now. A contested environment would be a scenario that the National Defense Strategy tells us to focus on, which would be a China or a Russia, where they have a fairly significant threat array. They have watched over the years how we fight. They know what our asymmetric advantages are, and they have invested in capabilities that take those away from us.

So a contested environment would be those where the threat is significant. We tend to call it anti-access/area denial is the terminology we tend to use within the Defense Department. But it is their ability to hold us off at ranges where we can either no longer perform our mission or it is more challenging.

One thing I will tell you is that no country on the planet can actually put a block over its country and deny us access. The very best they can do is put Swiss cheese over the top because there are

holes there, and my job is to find out how to exploit them and hold targets at risk for the Commander in Chief.

Mr. GRAVES. And so your plan would be to use this new platform in contested and noncontested areas? That is—

General GOLDFEIN. Actually, no, sir. Thanks for the question because, actually, we are not looking at a platform. We are looking from a platform solution, which is where we were, to an integrated set of platforms and capabilities that we can now fuse together so I can provide the capability for, you know, General Votel in an uncontested environment, what he needs, while at the same time, on day 1, I can give General Scaparrotti and his folks what he needs because I have got to do both. I don't have the luxury of doing one or the other.

Mr. GRAVES. Great. Thank you.

Ms. WILSON. If I could just elaborate on that a little, because it is—and we often think about platforms. And what we are talking about here is that almost everything that is flying today and everything in space is a sensor. So you have got space sensors. You have got manned and unmanned platforms. You have got things on the ground, things at sea, radars, and, you know, the F-35 has a radar on it.

We have got unmanned platforms with radars on them or cameras on them and the same in space. The trick is to fuse all of that data to give you a much more comprehensive picture on what is going on on the ground.

Ms. GRANGER. Thank you.

Before we—you think I have lost my mind. I have left Chairman Frelinghuysen and Mr. Visclosky to the last. They asked for that, the gentlemen that they are, so I will now call on Chairman Frelinghuysen.

NATIONAL DEFENSE STRATEGY

Mr. FRELINGHUYSEN. Great. Welcome back, Madam Secretary, General. I note that you were a year apart at the Air Force Academy. I am not sure whether you knew each other back then, but we are very proud of both of your accomplishments.

I asked the question of Secretary Spencer of the Navy last week—I think it maybe ruffled a few feathers. You are going to have a windfall of money here. At some point in time in the near future, we are going to get our 2018 bill passed, and then we are going to move fairly rapidly into 2019. What are you going to do with all this money, in one case, in a relatively short period of time and then looking towards 2019?

So I sort of asked sort of a rhetorical question or perhaps not so rhetorical. What are your priorities? We have—space dominance is an issue; we have remaking the Air Force; and what has been touched on very lightly, the huge sustainment costs of the F-35. I am a supporter of it, but, you know, the tale of that plane.

And then I read in defense news all the complicated platforms you are putting in there, all of which tie in through very sophisticated means. You have had some problems with some of the less sophisticated means, which is ALIS and ALS. What are your priorities specifically as they relate to sustaining this—really the plane

that is going to be—is jointly, you know, run and of such value to us and to our allies?

Ms. WILSON. Thank you, sir.

The overall priority in this budget is really to align with the National Defense Strategy. We accelerate the move to defendable space. We also shift to multidomain operations. And we really focus on continuing the emphasis on readiness.

We are in this budget proposing to purchase the next 48 F-35 aircraft. So we are continuing with the purchase of the new aircraft. Of course, the F-35 is now operational. We have 272 of them in the Air Force today, over 100,000 flying hours on the F-35, and it is performing well.

You point out one of the issues, which is the cost of sustainment of the aircraft. And the Air Force is—of course, this is a joint aircraft, so the Under Secretary of Defense for Acquisition and Sustainment, Ms. Lord, and the Joint Program Office are the ones that are primarily doing the negotiations and focusing on this.

But the Air Force, as the biggest customer, has a strong interest in continuing to drive down the cost of sustainment. That means negotiating very hard with the suppliers to reduce costs but also to bring in competition for those parts.

Mr. FRELINGHUYSEN. Well, is there the possibility that the cost of sustaining this remarkable aircraft could compete with your other, you know, your other needs here? I mean, this is a big—and then you are adding, as we should hope you would, additional assets to these aircraft here.

And I worry, just in the sense of the vulnerabilities of, let's say, some of the planes we have now. If we can't even get the system of systems working now, and we add more, you know, is there a distinct possibility that those who we view as our adversaries could find some vulnerabilities.

General GOLDFEIN. Sir, I will just tell you, I give Secretary Mattis a lot of credit for the team he has pulled together. And so whether you want—

Mr. FRELINGHUYSEN. Can you speak up a little bit, General?

General GOLDFEIN. Yes, sir.

Mr. FRELINGHUYSEN. Thank you.

General GOLDFEIN. I give Secretary Mattis a lot of credit for the team he has pulled together. Secretary Lord, who comes from industry, has taken on sustainment and has put together teams who are actually wire-brushing and driving down the cost of sustainment across all of our weapons systems, beyond the United States Air Force. He has brought in a Deputy Secretary, who also comes from industry, who understands how to produce large weapons systems and how to sustain it. So the team he has brought into place that is helping us as Joint Chiefs to be able to drive down the cost of sustainment is rather significant.

And as an international air chief, I look at this through the lens of not only what we do inside the Air Force, but how our allies and partners that are a significant part of this strategy can leverage what we do to drive down sustainment costs, because if we are paying more, they are paying more.

Mr. FRELINGHUYSEN. Yeah, just a last comment. I know the Air Force is in very competent hands. I am just saying: You are going

to get a flush of money here, and you are going to get a flush of money, you know, representing, you know, what, \$716 billion in the Defense Department is—wide. And, you know, after that, you know, anything goes. I mean, it could be a relatively dry hole. And I am just hoping—and I am sure that you are assuring us—that whatever the money is coming down the pipeline that it is going to be well spent, because in the future, we may not have the—you know, we may not have a caps deal that has embraced, I think, rightly our future defense needs.

Ms. WILSON. Sir, I understand you completely. And our job is to get \$1.10 of value out of every dollar that we spend in the Air Force, because somebody earned that dollar. So it is cost-effective modernization. It is driving down the cost of operations. It is making sure that every person that we put towards a job is a job best put in that place and not in some other place. And so I agree with you completely.

Mr. FRELINGHUYSEN. Thank you, Madam Chair.

Ms. GRANGER. Thank you.

Mr. Visclosky.

NEW NUCLEAR POLICY

Mr. VISCLOSEKY. Thank you very much.

I have three questions. The first question—and recognizing this is an open hearing and just want to broach the issue—is on the new nuclear policy. There is a discussion about a variable yield warhead for the cruise, and very concerned, not being a military or foreign policy expert, about the uncertainty, issues such as hypersonic weapons, varying yields create relative to our adversaries, recognizing they are working along the same lines, but that, as the Secretary pointed out, we have not had a troop killed from aircraft since 1953. We have not had someone die in a nuclear incident since 1945. I don't want that to happen.

What are the opportunities and challenges because of those variable warheads? And, again, I have two more questions. Just—if you just touch on the subject, we can follow up later.

Ms. WILSON. Sir, the variable yield is something more for the Navy than for the Air Force. Historically, we have had variable yields on different nuclear weapons for different kinds of targets, but the specific item I think you are referring to probably is maybe better addressed by the Navy.

SECURITY CLEARANCES

Mr. VISCLOSEKY. Navy.

Second question, following up on Chairman Rogers' question about the pilots shortage, and Mr. Cole talked about civilian retention: Secretary, you have talked about the quality-of-life, quality-of-service pay, and I absolutely agree with you. Another question, are you finding a problem retaining people after they get their security clearance? Because as you point out, the taxpayers are paying for GPS, because the government can't do anything right, and the government pays for those security clearances, and then someone comes in, and they are gone. And I also wonder about morale, that I am an eager, young person, bright, can't wait to work for the Federal Government. And my fellow employee says: Just wait until you

get your clearance because you are going to double your money and you can leave Federal service.

Ms. WILSON. Sir, actually, we don't find a problem retaining people who have clearances. We have, in some areas—I mean, pilots is the biggest issue or air crew generally is the biggest issue. We do have some difficulty because cyber professionals are also in very high demand.

I would say that our biggest challenge with security clearances is getting them through the process in the first place. Our backlog for security clearances over the last 18 months has almost doubled to 79,000 backlog waiting to get their security clearances.

Mr. VISCOSKY. Seventy-nine?

Ms. WILSON. 79,000 people in the Air Force waiting to get their security clearances.

Mr. VISCOSKY. What do you attribute that to, if I could ask? Because that is horrific.

Ms. WILSON. Sir, we don't do the security clearance background checks ourselves. There is a process through the Office of Personnel Management. And it has gone from—the backlog has gone up from 48,000 to 79,000 for the Air Force.

We are partnering with them and putting hubs for the interviews. We have asked them to change their processes to be able to do interviews over Skype rather than person to person. But it is a major issue for all of the services.

BUDGET CONTROL ACT

Mr. VISCOSKY. Last question, following up on Chairman Frelinghuysen, passing up on 2018 and 2019, Congress in its infinite wisdom has not dealt with the Budget Control Act for the last 2 years, 2020 and 2021. What problems does that present you as far as looking ahead? Because I know you are working on 2020 and the outyears now.

Ms. WILSON. Sir, budget certainty is one of the most important things that the Congress can do for us. And nothing did more damage to the American Air Force in the last decade than sequester. Sequester did much more damage to the Air Force than anything our adversaries have done.

General GOLDFEIN. Sir, can I just offer that, in many areas, we still have not recovered from the last time we went through the sequester because we made some decisions that were not—irreversible. And so as we go through and look at this, when you have got to find an upwards of \$10 billion in a single year, then you make some rather significant decisions and trades that are then irreversible.

So the last time we went through this, you know, we grounded, you know, two-thirds of the Air Force that stopped flying, because if you weren't getting ready to go to the Middle East or you weren't coming back from the Middle East, you stopped flying.

And so you don't recover that readiness. It is not linear. Because not only the air crew lose their readiness but the air traffic controllers, the munitions builders, all those folks that are not participating in a flying operation.

And all I will just tell you is that morale and readiness of the force are inextricably linked. If you walk the line today at Bagram

or Gunsan in Korea, what you will find is morale is very high because they are manned at 100 percent, they have the parts on the shelves, they have got the supervision they need, and they have got a mission, and they are focused.

The billpayer, to get them to that level of readiness, are the sourcing wings from back home in the CONUS. And when you walk those lines and you see less than full number of parts, less than the number of people, less than the right amount of supervision, you will find that morale is much lower.

And if we are going to keep this force, our investment that you are seeing in our budget in improving readiness is perhaps going to be most of the important work that we do to keep the force in.

Mr. VISCOSKY. One of my great regrets, and my wanting today is not going to change a thing, is that three separate elected Congresses have set aside 6 of the 8 years of the Budget Control Act, but we haven't dealt with the last 2. And I have hit my head with a hammer three times, and I am going to do it again. And in the meantime, there is lasting damage.

Thank you, Madam Chair.

Ms. GRANGER. That concludes today's hearing.

I would like to remind the subcommittee members that our next hearing is tomorrow at 10 a.m. I will be on time. The subcommittee is adjourned.

[CLERK'S NOTE—Questions submitted by Mr. Rogers and the answers thereto follow:]

EUROPEAN DETERRENCE INITIATIVE (EDI)

Question. The Air Force should continue to prioritize its EDI efforts to promote stability in Europe.

Can you please describe how the Air Force's 2018 EDI requests assist us in deterring Russian aggression in Europe? And is there more that the Air Force could be doing?

Answer. The AirForce 2018 EDI request reflects support for the European Command implementation plan's five elements:

1. Increased Presence—Increased presence efforts include Theater Security Packages, 5th Generation Fighter Training Deployments and Periodic Bomber Deployments.

2. Exercises and Training—Air Force participation in NATO Joint Exercise Program; regular bilateral exercises and training, and EUCOM sponsored joint exercises.

3. Enhanced Prepositioning—The Air Force's European Contingency Air Operations Set (ECAOS) program provides for prepositioning of logistical, communications, and medical support gear required to operate at remote airfields. ECAOS extends the Air Force's ability to deploy air power capability to locations throughout the EUCOM AOR where we have little-to-no historical experience.

4. Improved Infrastructure—The ECAOS program includes over \$1B in infrastructure upgrades to airfields throughout Europe in coordination with allies and partners—including cost sharing.

5. Build Partnership Capacity—Through EDI, the Air Force assists allies and partners with technical, material and training assistance that will allow them to deter and defend themselves more effectively; and, in the event of conflict, integrate more effectively with U.S. air, space and cyberspace assets.

As with many of the Air Force's assigned missions, more can be accomplished if high demand/low density resources were available in greater numbers. The demand on 5th generation fighters, bombers, Command and Control systems, and ISR assets often make us unable to fill the requirements of Combatant Commanders. These air power systems have proven to be especially critical to effective deterrence in the European theater.

Question. As part of the "Building Partnership Capacity" category of EDI, the Air Force is requesting \$8.4 million for the European Partner Integration Enterprise. This initiative consists of collaborative ISR processing, exploitation and dissemina-

tion activities with European allies. Can you provide additional detail about this initiative?

Answer. The European Partner Integration Enterprise (EPIE) initiative is hosted on the U.S. Battlefield Information Collection and Exploitation System (BICES), which connects all NATO and several non-NATO European partners. EPIE provides a capability to integrate and exploit multiple U.S. and allied sources of intelligence data and to provide the exploitation to coalition partners as well as U.S. users. As of March 2018, there is a permanent long-term presence in Germany at EPIE-Ramstein by Italy, the Netherlands, Belgium, and France, with Denmark participating on a rotational basis and Spain expected to commence a long-term presence later this year. Latvia, Lithuania, Estonia, Poland, and Romania have participated in orientation sessions. EPIE enables collaborative ISR processing, exploitation, and dissemination as well as engagements to expand the number of participating partner nations.

The FY19 funding requested for the EPIE initiative includes: (1) \$1.8 million in military personnel appropriations to fund air reserve component personnel to provide partner nations with expertise and orientation on all aspects of the ISR mission and to conduct forward deployed activities in Baltic and Eastern European locations using two deployable processing nodes; and (2) \$6.6 million in operations and maintenance funding to support: (a) hardware lifecycle replacement and contract support for EPIE system architecture and software, including connectivity with BICES and other U.S. Classified networks in accordance with Defense Information Systems Agency standards; (b) travel for personnel for expertise-sharing with partners as well as participation in forward deployed activities; (c) deployment of U.S. Air Force tactical satellite communications capabilities supporting forward operations; and (d) EPIE project management.

SUPERIORITY IN SPACE OPERATIONS

Question. Due to advanced threats from China and Russia, the United States must prioritize efforts to maintain superiority in the space domain.

Has the Air Force engaged with U.S. launch providers to address these problems with innovative solutions, post-satellite deployment?

Answer. The Air Force is developing innovative solutions to address these problems. As an example, the Air Force awarded a \$114.6M contract on 11 December 2017 for an advanced payload adapter, known as the Long-Duration Propulsive Evolved Expendable Launch Vehicle Secondary Payload Adapter (LDPE). The LDPE will maximize rideshare opportunities to space and improve operational flexibility by adding power and propulsion to the payload adapter, which would otherwise just be orbiting space junk. The first LDPE has a planned launch date in June 2019 and we are exploring options for a second and third unit. The Air Force is also engaging with DARPA's Robotic Servicing of Geosynchronous Satellites and Orbital ATK's Mission Extension Vehicle to provide innovative on-orbit solutions post-satellite deployment.

Question. There is technology in development that would allow us to repurpose otherwise useless spent uppers stages in a way that may allow us to counter Russian and Chinese aggression. Is the Air Force fostering and developing these technologies and others like them?

Answer. No, the Air Force is not currently developing systems to repurpose spent upper stages.

On 11 December 2017, the Air Force awarded a \$114.6M contract for an advanced payload adapter, known as the Long-Duration Propulsive Evolved Expendable Launch Vehicle Secondary Payload Adapter (LDPE). The LDPE will maximize rideshare opportunities to space and improve operational flexibility by adding power and propulsion to the payload adapter, which like the upper stages would otherwise just be orbiting space junk. LDPEs can host future experimentation payloads to both mature technology and refine Concept of Operations to counter Russian and Chinese aggression. The FY19 budget request includes funding for a family of modular resilience payloads to support threat warning and protection options for high-value satellites.

Question. In terms of specific investments for FY2019, the Air Force is prioritizing Next Generation Infrared and GPS 3. Can you please explain how these, and the other investments you are making, ensure that the United States can maintain superiority in the space domain?

Answer. The Air Force is pursuing multiple programs and capabilities to maintain space superiority, including GPS and missile warning. The GPS III Follow-on satellites are the next increment of capability improvement for the GPS system and will include multiple enhancements such as Regional Military Protection. This will

augment current Military-Code signals with a high-power, regionally-focused signal to targeted areas, improving our ability to operate through contested environments. The Next-Generation Overhead Persistent Infrared program is the successor to Space Based Infrared System and includes strategically survivable missile warning satellites and a modernized ground system.

AGILE COMBAT EMPLOYMENT-CHINA

Question. Due to increased ranges of Chinese cruise missiles, the Air Force has proposed leveraging divert airfields and Agile Combat Employment in the case of conflict with China.

Can you please provide a bit more detail in how you foresee implementing this tactic?

Answer. The Air Force operational concept of Agile Combat Employment uses traditional basing constructs for global and regional airpower projection and leverages divert/austere airfield use to increase resiliency and effectiveness in contested environments. This concept would be implemented by deploying, dispersing, and maneuvering air forces across a range of bases and locations that are both close to, and far from, the area of conflict within the contested zone. The concept is nested under USPACOM's strategy for joint force resiliency and seeks to dynamically employ airpower from a range of locations—varying from robust to austere airfields. Logistics, manpower, infrastructure investment and Ally and Partner access are critical enablers of this concept to ensure survivable joint access and maneuver in the global commons.

Question. Are you comfortable with the current number of potential divert locations you can operate from in the Indo-Pacific?

Answer. No. As the Air Force postures to ensure viable military options in the Indo-Pacific (in-line with National Defense Strategy guidance on great power competition) the Air Force must expand access and agreements with Allies and Partners in the region. Expanding the capability and capacity of U.S. airpower basing, at all levels from robust to austere airfields, will strengthen our relationships and coordination with regional Allies and Partners to expand the competitive space today and better prepare for conflict tomorrow.

Question. And especially when it comes to divert locations in foreign countries, do you have the tools you need to work with these countries to reach the kind of agreements you need to use their airfields? Does the State Department have a role in these processes?

Answer. Current authorities permit authorized Department of Defense personnel to negotiate and conclude a variety of international agreements with respect to use of airfields. The nature of the agreement is specific to each country: some agreements authorize U.S. forces to use airfields freely, with submission of the flight plan and advance divert clearance; other agreements are more restrictive and limited to emergency (force majeure) scenarios. The Department of State is consulted prior to negotiating and concluding any international agreement. The Secretary of State determines whether an international agreement is required to be transmitted to Congress in accordance with the Case Act.

CONTRACTING ADVERSARY AIR TRAINING SUPPORT

Question. The Air Force should assess whether it should seek additional competition as it contracts for adversary air training support for air operations training.

The FY19 USAF budget request includes \$131 million for the Nellis AFB adversary air training contract. The original adversary air contract was awarded to a sole source that has been subsequently renewed on a sole source basis for two successive years. The next phase of the contract adversary air training will be competitively procured, but only a single competitor will be selected.

Answer. This is correct. A competitive source selection is under way to replace the sole source Nellis ADAIR I with Nellis ADAIR II. This competitive contract is intended to satisfy the Nellis adversary air requirements until performance start on the Combat Air Force Contracted Air Support (CAF CAS) strategic multiple award contract currently in the requirements development stage.

Question. Would the selection of more than one contractor for this new industry give the Air Force greater assurance that the adversary aircraft performance requirements are met and that these contract providers will continue to invest in their aircraft capabilities to assure that the Air Force pilots training experience near-peer aircraft performance and tactical challenges over the life of the contract?

Answer. The selection of more than one contractor does give the Air Force greater assurance that requirements are met and that contractors will continue to invest in their aircraft capabilities. Industry indicates they are actively pursuing techno-

logical upgrades to meet advanced adversary air training requirements. The current CAF CAS program acquisition strategy plans for multiple contract awards across the 22 locations.

[CLERK'S NOTE.—End of questions submitted by Mr. Rogers. Questions submitted by Mr. Aderholt and the answers thereto follow:]

EELV LAUNCH SERVICE AGREEMENTS

Question. I follow the national security launch business closely and have not seen that reusability of rockets has resulted in lower prices for NASA. In fact, cargo launch prices went up. Will the EELV Launch Service Agreements require a lower launch price when a provider utilizes a used rocket?

Answer. It is too early to tell if reusability will alter the cost of future EELV missions. The EELV procurement strategy to follow the Launch Service Agreements is still in the review and approval process. The Air Force currently plans to use a dual-source strategy based on the best value to the Government. Potential vendors will need to make a business decision to include or not include reusable launch vehicles and propose a solution that balances price and risk and provides the best value.

[CLERK'S NOTE.—End of questions submitted by Mr. Aderholt.]

THURSDAY, MARCH 15, 2018.

**FISCAL YEAR 2019 UNITED STATES ARMY BUDGET
OVERVIEW**

WITNESSES

**HON. DR. MARK T. ESPER, SECRETARY OF THE ARMY
GENERAL MARK A. MILLEY, CHIEF OF STAFF OF THE ARMY**

OPENING STATEMENT OF CHAIRMAN GRANGER

Ms. GRANGER. The subcommittee will come to order.

This morning, the subcommittee will continue our series of open defense posture and budget hearings with our military services. Today, we will hear from the Army leadership on their fiscal year 2019 budget request.

Since 2001, the Army has risen to the challenge of fighting counterinsurgency campaigns in Iraq and Afghanistan. Even as such conflicts continue, the Army must also prepare for a very different kind of fight under the new National Defense Strategy. The subcommittee is prepared to help the Army modernize and restore readiness for the full spectrum of conflict.

Before I introduce our witnesses, I would like to recognize our ranking member, Mr. Visclosky—I am sorry, I am moving fast—for any remarks he would like to make.

OPENING REMARKS OF MR. VISCLOSESKY

Mr. VISCLOSESKY. Gentlemen, I appreciate your service and your testimony. I look forward to it.

Chairwoman, thank you very much for holding the hearing.

Ms. GRANGER. Thank you.

Allow me to introduce our witnesses: The Honorable Dr. Mark T. Esper, Secretary of the Army; General Mark Milley, Chief of Staff of the Army. Secretary Esper is making his first formal appearance before the subcommittee.

Secretary Esper, welcome.

Secretary Esper is appearing alongside the chief of staff, General Milley.

General, thank you for being here today and all the work that you do.

We look forward to hearing your views. Please proceed with your opening remarks.

SUMMARY STATEMENT OF SECRETARY ESPER

Secretary ESPER. Chairwoman Granger, Ranking Member Visclosky, distinguished members of the committee, good morning, and thank you for the opportunity to appear before you today.

READINESS

Let me say up front that the Army's readiness across its formations is improving, and if called upon today, I am confident we would prevail in any conflict. This is due, in part, to the increased funding Congress has provided recently. For this, I would like to say thank you. However, if we are to continue increasing our readiness to desired levels and modernize the force, we require predictable, adequate, sustained, and timely funding.

The Army's mission is to defend the Nation—the Army's mission to defend the Nation has not changed, but the strategic environment has. We have returned to an era of great power competition that makes the world ever more complex and dangerous.

While the Army must be ready to deploy, fight, and win anytime, anywhere against any adversary, the National Defense Strategy has identified China and Russia as the principal competitors against which we must build sufficient capacity and capabilities. Both countries are playing a more aggressive role on the world stage and either possess or are building advanced capabilities that are specifically designed to reverse the tactical overmatch we have enjoyed for decades.

The Army has a comprehensive plan, however, to ensure its long-term dominance. Fiscal uncertainty, though, has done a great deal to erode our readiness and hamper our modernization efforts. Late appropriations challenge the Army to execute funding well, which is why we are seeking increased flexibility to spend these precious dollars when funding is delayed.

To address the challenges mentioned above, I have identified three focus priorities for the Army: readiness, modernization, and reform. Readiness is the top priority because only a ready total Army—Regular Army, Guard, and Reserve—can deter conflict, defeat enemies, and enable the joint force to win decisively. And while the quality, training, and esprit of our soldiers are what make the U.S. Army the most ready and lethal ground combat force in history, this superiority is enabled by the best weapons and equipment we can provide them.

MODERNIZATION

As such, the second priority is modernization, or future readiness. To ensure overmatch on future battlefields, the Army is now increasing its investments in modernizing the force. We are also laying the groundwork for more increases in the coming years. The Army's modernization strategy is focused on one goal: Make soldiers and units far more lethal and effective than any adversary can imagine.

The establishment of the Army Futures Command this summer is the best example of our commitment to the future lethality of the force. Army Futures Command will address the key shortcomings of the current acquisition system, providing unity of command, effort, and purpose to the modernization process.

The Army has also identified its top six modernization priorities for the coming years. Each of these priorities is detailed in our written statement and is the purview of a newly established cross-functional team. The purpose of these CFTs is to determine the re-

quirements of needed capabilities, to ensure all stakeholders are at the table from day one, and to focus Army resources on accelerated experimentation, prototyping, and fielding.

REFORM

My third priority is reform, freeing up time, money, and manpower to enhance readiness, accelerate modernization, and ensure the efficient use of the resources provided to us by the American people. Our reform efforts, particularly with the acquisition system, are long overdue. While Futures Command is probably the boldest reform we are pursuing, other Army reform initiatives owe much to the acquisition authorities delegated to the services in prior legislation. With these authorities, we are reinvigorating the Army Requirements Oversight Council, moving major Defense acquisition programs back to the service, and using other transactional authorities to accelerate fielding in limited situations.

Although a ready and modernized Army is critical to defend the Nation, we must not overlook what makes us remarkable. For this, I have outlined three enduring priorities. First, taking care of our soldiers, civilians, and their families; second, a servicewide recommitment to the Army's values, especially treating everyone with dignity and respect; and finally, strengthening our allies and partners by building stronger ties. I look forward to discussing these with you as time permits.

With that, let me thank you again for this committee's continued support of the Army and specifically the funding increases requested in fiscal year 2018 and the fiscal year 2019 budgets. I look forward to your questions and appreciate the opportunity to discuss these important matters with you today. Thank you.

Ms. GRANGER. Thank you.
General Milley.

SUMMARY STATEMENT OF GENERAL MILLEY

General MILLEY. Chairwoman Granger, I want to thank both you and Ranking Member Visclosky and all the distinguished members of the committee for the opportunity to testify today. And although he is not here right this minute, I do want to acknowledge and recognize former Chairman Frelinghuysen for his great support to the United States Army over the last couple of years since I have been the chief and for many, many years of dedicated service to our Nation.

COMBAT-READY

As you all know, for the past 17 years, the U.S. Army has continuously provided trained and ready forces to both Iraq and Afghanistan and elsewhere as we simultaneously meet the needs of the combatant commanders around the globe. And today, as it was throughout the year and last year, we have approximately about 180,000 soldiers serving in 140 countries around the world. And that represents, broadly speaking, about 50 to 60 percent of combatant command demand comes to the Army to support.

Congress' support has allowed the Army to become significantly more combat-ready today than we were 2½ years ago when I be-

came the chief of staff of the Army. We have increased the number of combat training center rotations. We have improved equipment readiness rates. The spare parts, we have replenished our Army preposition stocks. We have increased our personnel end strength and started to fill some of the holes in our operating units. And significantly, we have improved both our munitions shortfalls along with some of our critical infrastructure.

We must be ready, though, not only now, but in the future. And we have to maintain a decisive overmatch to achieve victory, as the Secretary said, against any adversary, anytime, anywhere. The tyranny of the present has consumed us for the past 16 years, while our competitive advantage against peer threats has eroded.

And advances by our adversaries are very real. This is not a classified hearing, but I will be happy to illuminate those advances in a classified hearing, specifically with respect to Russia and China as they continue to assert regional influence in their development of advanced weapons and technology. Likewise, Iran is attempting to expand its regional influence. And as we all saw last week in the recent positive turn of events regarding North Korea, it is very welcome and I remain cautiously optimistic, as Secretary of Defense Mattis said.

But we, the Army, we must remain ready. We must remain ready to present options to the President for his consideration, if required, and we will do that.

The current battlefield is already lethal, and the future battlefield is likely to prove more lethal than anything we have ever recently experienced. So the time is now for the Army to modernize, to both stay ready today and to build the future force of our Nation. That is going to require a modern Army. The Army needs predictable, adequate, sustained and timely funding, and you know that and you all agree with that.

The Army's fiscal year 2019 budget request reflects our priorities: to grow and maintain a highly capable force today; to modernize and build the future force; to take proper care of our soldiers, family members, and civilians; and all the while being good stewards of the generous money of taxpayer money that the Congress has given us. We recognize the American taxpayer entrusts us with a significant amount of money to meet these demands, and we will be diligent stewards of our resources and we will enforce accountability to make effective use of every single dollar.

Your support for the fiscal year 2019 budget will ensure the soldiers of the United States Army remain ready to fight tonight as we prepare for any unforeseen conflicts of tomorrow. Thank you again for the opportunity to testify, and I look forward to your questions.

[The written statement of Secretary Esper and General Milley follows:]

RECORD VERSION

STATEMENT BY
THE HONORABLE MARK T. ESPER
SECRETARY OF THE ARMY

AND

GENERAL MARK A. MILLEY
CHIEF OF STAFF
UNITED STATES ARMY

BEFORE THE

HOUSE APPROPRIATIONS COMMITTEE - DEFENSE

SECOND SESSION, 115TH CONGRESS

ON THE POSTURE OF THE UNITED STATES ARMY
MARCH 15TH, 2018

NOT FOR PUBLICATION
UNTIL RELEASED BY THE COMMITTEE

Introduction

America's Army is lethal and effective. Our lethality provides the assured capability to defeat enemy ground forces through sustained land campaigns in defense of our vital national interests. To maintain our land power dominance, we will concentrate our efforts on our priorities—Readiness, Modernization, and Reform—to ensure America's Army is always ready, now and in the future. We also live by enduring priorities to take care of our Soldiers, Civilians, and their Families; to re-commit to the Army values and warrior ethos that guide us; and to strengthen relationships with allies and partners.

We thank Congress for its strong support, which has enabled the Army to halt the decline in our warfighting readiness. Importantly though, the Army needs timely, predictable, adequate, and sustained funding to preserve these readiness gains now and in the future. The Army's fiscal year 2019 (FY19) budget prioritizes our resources based on the President's guidance, and our strategy is consistent with the National Defense Strategy. This year's budget allows us to continue to build readiness for high intensity conflict and begin building our future force through key modernization efforts. It also enables us to continue to take care of our people and institute reforms across the Army to free up time, money, and manpower. Army leadership, with congressional support, is committed to ensuring America's Army is ready now and modernizing for the future.

Strategic Environment

Our Army faces a complex and demanding strategic environment. This will require the Army to remain ready for a wide range of missions to defend American interests. We must build readiness for high-intensity conflict and modernize our forces to ensure overmatch against near-peer competitors, while sustaining irregular warfare as a core competency.

Our competitors are seeking to alter global strategic realities for their own benefit, often at the expense of U.S. interests and those of our allies and partners. Russia and China continue to assert themselves in an effort to gain dominance in key regions, and are developing advanced weapons to achieve parity both strategically and in close combat. North Korea has pursued nuclear weapons and ballistic missiles for decades with significant advances over the last year. Iran is attempting to expand its regional influence by developing more advanced ballistic missiles and supporting insurgent groups against U.S. allies in the region. Additionally, these state actors use a range of actions short of armed conflict, from

cyber-attacks to irregular warfare through proxies that destabilize regions without attribution. Finally, terrorist groups continue to threaten the U.S. homeland, U.S. citizens, U.S. interests abroad, and our allies and partners.

Soldiers directly contribute to our Nation's efforts to counter these challenges by serving combatant commanders worldwide with over 178,000 Soldiers operating across a wide array of missions. The Army is committed to maintaining peace, stability, and security in the Asia-Pacific with nearly 80,000 Soldiers assigned, deployed, and forward-stationed throughout the region. 24,000 Soldiers continue to deter North Korean aggression, with the Army focused on building readiness to respond to any contingency, including potential conflict. In Europe, the Army has over 30,000 forward stationed and rotational forces. In the Middle East, the troop increase in Afghanistan has already begun to advance the train, advise, and assist mission at the tactical level. In support of homeland defense, the Army provides over 15,000 Soldiers as well as a Global Response Force of 9,500 personnel, capable of deploying anywhere in the world within 96 hours. Over the last year, Army forces were critical in disaster relief efforts in Puerto Rico and the U.S. Virgin Islands resulting from Hurricanes Maria and Irma, the California wild fires and mud slides, and widespread flooding in the central United States.

The Army's competitive advantage is our Soldiers' ability to rapidly deploy when and where required, gain and maintain overmatch, and achieve decisive victory against any adversary. This produces a combat-credible deterrent against potential adversaries who are hostile to our Nation's interests. Sustained, predictable, adequate, and timely funding will secure the Army's ability to continue to defend our Nation's interests.

The Army's Budget Request

The Army's total FY19 budget request totals \$182.1B which consists of \$148.4B in the base budget and \$33.7B for Overseas Contingency Operations (OCO). This represents an eight percent increase over our total FY18 President's Budget plus amendments. Our request reflects the Army's priorities: grow and maintain a ready high-end force; build our future force through key modernization efforts; continue to take care of our people; and institute reforms that lead the Army to be even better stewards of taxpayer dollars.

Readiness to Fight Tonight

Ready forces ensure that the Army can compete against our adversaries, deter conflict, and win decisively. FY17 and FY18 authorizations and FY17 appropriations provided critical support to fill manning requirements, fund important gains to training such as increasing combat training center rotations, increasing equipment operational readiness rates, building and modernizing Army Prepositioned Stocks, and beginning to address munitions shortfalls. Barring a significant increase in demand for land forces, the Army will attain our Total Force readiness recovery goals in 2022. To ensure that we meet this goal, we need predictable, adequate, sustained, timely funding, enabling us to sufficiently organize, man, train, and equip our formations.

We are growing the Army by both recruiting and retaining physically fit, mentally tough Soldiers without lowering standards. Increased end strength has enabled the Army to fill manning shortfalls in key formations. Soldiers within the ranks are also increasingly deployable, with a four percent decrease in Regular Army non-deployable rates over the past year, and an overall goal of a five percent non-deployable rate by FY21. Contributing to this is increased holistic fitness, improved medical tracking, unit injury prevention and physical therapy programs, and leveraging end strength increases to raise operational unit manning levels. These are accompanied by new policies intended to rebuild a culture of deployability across the force. As a result, the number of brigade combat teams (BCTs) in the highest state of personnel readiness has more than doubled.

Tough, realistic training is key to maintaining our competitive advantage in the current security environment. In order to increase Soldiers' opportunity to conduct training focused on lethality, we have reduced, and will continue to reduce, ancillary mandatory training, requirements, and distractions at home station. We are also using virtual simulations to increase training repetitions for small units, creating greater proficiency at unit collective tasks. Leaders across the Army are taking steps to ensure a predictable training management cycle, and returning our training focus to preparation for a high-end fight validated at combat training centers. However, these units can only remain ready if they remain together, so we must also find innovative ways to meet combatant command demand without breaking apart our baseline combat formations.

An important part of the Army's effort to maintain the readiness of the Army's BCTs for major combat operations is the security force assistance brigade (SFAB). The SFAB will provide combatant commanders with a skilled advisory force to team with our security partners worldwide. Previously, we assigned BCTs to conduct advisory missions, breaking those formations apart. The first SFAB deployed to Afghanistan in the spring of 2018. We request congressional support to man, train, and equip six SFABs: five in the Regular Army and one in the Army National Guard.

In addition to improved training, our Army must have sufficient equipment. We are modernizing our equipment, refining our supply distribution systems, and enhancing our Prepositioned Stocks to balance our capabilities across multiple threats and theaters. However, we continue to have shortages of some critical preferred munitions. As a result, Holston Army Ammunition Plant in Tennessee is expanding production capacity, and Pine Bluff Arsenal in Arkansas and McAlester Army Ammunition Plant in Oklahoma are beginning repair and upgrade programs. We request congressional support as we continue to reform and align requirements and resources within the Organic Industrial Base.

Modernization: Ready for the Future Fight

Over the past decade, the Army made necessary but difficult choices to defer modernization in order to support combat operations. We upgraded current weapons systems rather than acquire new or next generation technologies. However, we can no longer afford to delay modernization without risking overmatch on future battlefields. Thanks to congressional support, the Army now has the means to modestly increase investments towards modernization and lay the groundwork for increased funding in the coming years. To improve modernization we will focus on three things. First, we will establish the Army Futures Command to reform our acquisition process through unity of command, unity of effort, and increased accountability. Second, through the efforts of eight cross functional teams, we will focus these additional resources towards six modernization priorities to ensure future overmatch. Third, Army leadership will strengthen our relationship with industry, our allies, and the top intellectual and innovative talent our Nation has to offer. Collectively, these improvements and others will help ensure our lethality and future readiness.

The Army must adapt quicker than our adversaries to maintain our competitive advantage. This is the rationale for the Army Futures Command. The formal establishment of

Army Futures Command in the summer of 2018 will represent the most significant organizational change to the Army's structure since 1973. The new command will consolidate the Acquisition process under one organization with a mission to deliver integrated solutions for increased lethality and capabilities to the Soldier when and where they are needed.

The FY19 budget coupled with our reforms will enable the Army to accelerate upgrades to critical capabilities, managing current risk while we innovate and prototype with a goal to begin fielding the next generation of combat vehicles, aerial platforms, and weapons systems by 2028. These vehicles and weapons must be better than anything our adversaries will deploy in the future. We will focus modernization, science and technology, and research and development efforts on six modernization priorities, managed and assessed by eight cross functional teams:

- Long Range Precision Fires—modernize a cannon for extended range, volume, and increased missile capabilities to restore Army dominance in range. Systems like the Extended Range Cannon Artillery, which has been accelerated to FY23, and the Long Range Precision Fires Missile, accelerated to FY21 protect and ensure freedom of maneuver to forces in contact with the enemy in deep, close, and rear operations. The Army has included \$73.7M for Long Range Precision Fires in the FY18 Enhancement Request, with \$22M in additional requested funds in the FY19 President's Budget.
- Next Generation of Combat Vehicles—develop prototypes that lead to the replacement of our current fleet of infantry fighting vehicles, and later tanks, in manned, unmanned, and optionally manned variants. A next generation vehicle is needed to enhance Soldier protection, increase mobility, and make our forces more lethal. Prototypes for both manned and robotic vehicles will arrive in FY21, with \$13.1M requested in the FY18 Enhancement, and \$84M in the FY19 President's Budget.
- Future Vertical Lift—incorporate manned, unmanned, and optionally manned variant vertical lift platforms that provide superior speed, range, endurance, altitude, and payload capabilities. These include the Future Unmanned Aircraft System, which is undergoing experimentation and will be prototyped in FY24, and the Modular Open System Approach, a software prototype that has been accelerated from FY28 to FY26. \$25.1M is included in the FY18 Enhancement Request for Future Vertical Lift, with additional funds included in the FY19 President's Budget.

- Network—develop expeditionary infrastructure solutions to fight reliably on the move in any environment. The Army Network should incorporate electronic warfare; resilient, secure, and interoperable hardware; software and information systems; assured position, navigation, and timing; and low signature networks. \$180M is included in the FY18 Enhancement Request to conduct Network related experimentation next fiscal year, including an Infantry Brigade at the Joint Readiness Training Center this summer, and a Stryker Brigade by early 2019.
- Air and Missile Defense—ensure our future combat formations are protected from modern and advanced air and missile delivered fires, including drones. We are focusing on capabilities that include Mobile Short-Range Air Defense with directed energy and advanced energetics. We are also accelerating the fielding of existing air defense capabilities over the coming years.
- Soldier Lethality—develop the next generation of individual and squad weapons; improve body armor, sensors, and radios; and develop a synthetic training environment that simulates the modern battlefield, allowing our Soldiers multiple iterations before they ever deploy. The FY18 Enhancement Request includes \$81M to experiment and procure Enhanced Night Vision Goggles by FY21.

These modernization priorities illustrate how our Army will adapt to future threats. The cross functional teams are the driving force for the modernization priorities. Each cross functional team uses technical experimentation and demonstrations, in conjunction with increased engagement with industry and commercial sector partners, to inform prototype development and reduce the requirement process.

The Army remains concerned about preserving key skills and capabilities for our original equipment manufacturers and their key supplier bases. Collaboration with our private sector partners early in the process helps reduce risk. Efforts such as the Army Manufacturing Technology Program have provided affordable and timely manufacturing solutions that assist our industry partners to address manufacturing risks. Collectively, congressional support for the Army Futures Command, implementation of the future recommendations of the cross functional teams, and a strong relationship with the commercial base has one simple goal: make Soldiers more lethal and ready for the future.

Reform

To achieve these objectives, we are assessing everything we do across the Army, looking for ways to free up time, money, and manpower for our top priorities. In support of DOD reform efforts, we have placed increased emphasis on a number of business reforms and stewardship initiatives. Specifically, we are instituting Army-wide programs that address Acquisition Reform; Contract Management; Budget Execution; divestiture and consolidation of legacy information technology systems; and auditability of our resources.

The Army's Acquisition Reform Initiative shortens the development timeline and approval process of capabilities requirements. This reform initiative directs the consolidation of two oversight groups into one and provides Army leadership with access to decisions earlier in the decision cycle. The Army is creating strategic enterprise metrics through policies and procedures intended to drive significant savings from the reform of contracted services per year from 2020 to 2024. We are also monitoring de-obligating funds through the Command Accountability and Execution Review to increase Army annual buying power. Additionally, we are improving our auditability. This year, we plan to complete an independent audit that will further enable the Army to improve our business practices and management of our resources.

Another key area of reform is in Army institutions. We are undertaking efforts to optimize non-divisional two-star headquarters and above to enable faster decision making. We are beginning by optimizing key essential tasks at the Army Secretariat, Army Staff, and Army Commands to address manning requirement needs at the division level and below. Next, revised experimentation and war gaming will accelerate new Army warfighting doctrine, providing a comprehensive framework to underpin how we train and how we fight. And finally, a new talent management based personnel system will optimize individuals' effectiveness and professional development, and ensure we develop and retain exceptional Leaders and Soldiers of unmatched lethality.

Soldiers, Civilians, and Families: Our Greatest Asset

The United States Army is composed of Regular Army, Army National Guard, and Army Reserve Soldiers, Civilians, and Family members serving the Nation at home and abroad. The quality of Soldiers the Army attracts and retains is extremely high. Quality metrics for Army recruits are at their highest point, exceeding every DOD-mandated

education and aptitude threshold for the eighth year in a row. Waivers for recruits are down nearly eight percent over the past decade. The Army's long term success depends on developing smart, innovative leaders of character who bring a wide range of skills and experiences to our ranks. We will remain a standards-based organization and maintain the values that we have established for those who enter and serve the Army and for those Soldiers who remain for a career. We will not lower standards to meet our end strength goals.

The Army is committed to taking care of our Soldiers, Civilians, and their Families by maintaining opportunities for promotions and schooling, providing attractive career options, and continuing quality of life programs. We ensure the well-being of our people through world-class medical services, quality facilities to live and work, and child care and youth services. New civilian hiring initiatives for spouses promise to accelerate work opportunities on Army installations, while other reforms may allow them to sustain careers by reducing the frequency of moves. The cumulative effect of these programs is to increase retention through increased satisfaction with Army life.

We also take care of individual Soldiers and strengthen teams through Sexual Harassment/Assault Prevention and Response initiatives, active Suicide Prevention measures, Army Warrior Care, and transition assistance through our Soldier for Life program. In particular, a new task force is addressing suicide reduction in the Army National Guard and Army Reserve. Taking care of our people ensures Soldiers and Families have the support they need to focus on preparing to deploy, fight, and win our Nation's wars.

Conclusion

On behalf of the entire Army, we thank Congress for their support that allows us to continue to improve readiness and make an increased investment in our future Army. Our current security environment continues to have numerous challenges, and they are growing. With predictable, adequate, sustained, and timely funding, we will increase capacity, train advisory forces, close critical munitions gaps, improve modernization, and take care of our Soldiers, Civilians, and their Families. We are a standards-based organization accountable to Congress and the American people. We know that the only acceptable result of our efforts is a lethal Army, ready now, and prepared for the future.

Ms. GRANGER. Thank you so much.

Before we begin our questions, in the interest of time and fairness for our witnesses and all the members, we limit the question, including the response, to 5 minutes per round, trying to have—I think we should be able to this morning—have two rounds. But if you would watch, there are green, yellow, and red lights, and red means you are over. So I am a former teacher; I watch them, and I hope all of you will, because we really want to hear from you. This is a very important hearing.

We are going to have questions. I am going to call on Mr. Visclosky first.

Mr. VISCLOSKY. Madam Chair, I will defer at this point.

Ms. GRANGER. Thank you.

Mr. Calvert.

READINESS

Mr. CALVERT. Thank you, Chairman.

Secretary Esper, General Milley, thank you for being here today and thank you for your service to our country.

Over 16 years of combat and contingency operations have compromised the military's readiness to conduct high-end warfighting missions. The new National Defense Strategy focuses on nation-state conflict with a peer adversary, which is the Army's domain.

All of us here have heard about the readiness shortfalls in the United States Army. Only 5 of 58 brigades are combat-ready to fight. The Army's operational tempo has not slowed down, and additional units, equipment, and military personnel have been deployed to eastern Europe to deter and defend against Russian aggression. The fiscal year 2019 request seeks to restore training and maintenance shortfalls by requesting additional funds to prioritize readiness across the Army.

Can you please detail the Army's primary readiness efforts that we will execute as a result of the fiscal year 2019 President's budget? Specifically, how many combat teams are currently rated ready for combat and how many do you expect will be rated ready for combat after executing the fiscal year 2019 budget? Do you expect to increase training rotations at the National Training Center at Fort Irwin, California, and the Joint Readiness Training Center at Fort Polk, Louisiana? And how do you intend to integrate simulation and next-generation augmented reality into your traditional deployment readiness exercise in the coming years?

General MILLEY. Thanks, Congressman, for the question. What I can do is provide a very detailed classified briefing on the complete readiness. In this session, let me say this: When I became chief 2½ years ago, there were two brigades combat-ready. Today, we are significantly more combat-ready, and I need to provide you an update on the actual numbers, because the numbers that you mentioned have been improved since those numbers were given to you.

And I can assure you that the United States Army has sufficient readiness to take on whatever adversary that the United States meets today or tomorrow. And I am very confident of that. I wasn't confident of that 2½ years ago. I am very confident of that today.

That is not to say we are where we need to be. The objectives we set out, the unclassified objectives for readiness, is we want to attain 66 percent, two-thirds, roughly, of all of our brigade combat teams in the Regular Army, in the active Army, at the highest level of readiness. And for the Reserve component and the National Guard, we want to attain a readiness level of 33 percent. That is what this budget, fiscal year 2019, is built around, is those two metrics of success. And we are not at those numbers today, but we are on a glide path to achieve them.

A couple of challenges. First challenge is time. Units aren't built just overnight and their readiness is not built overnight, as you well know. So it takes time and it takes repetition. It takes a lot of reps on a sled to get units to a level in order to fight the high-end fight against near-peer threats or regional threats.

The second thing, as you mentioned, the demand. There is a global demand. It is significant, and a lot of that demand is met by the United States Army. Right now, for example, we have got several brigades involved in train, advise, assist missions inside the Middle East, and we need to recoup those brigades and get them trained for what their organizational design is to do. So demand plays a big role in that. I expect that demand will, hopefully, stay steady or come down slightly, and we will recoup some of that.

And the last and most important thing, in terms of readiness, and you have been more than generous in your giving it to us, is a budget, and that is really significant. So time, demand, and money are what is key to readiness.

You asked for when we think we would achieve the readiness levels. What we are saying in our analysis, if the international environment stays the way it is right this minute, we think, on the glide path we are on, we will achieve the readiness objectives complete by somewhere around the 2021–2022 timeframe.

Secretary ESPER. And if I can, I will answer two of the specific questions you raised, Mr. Calvert. The fiscal year 2019 budget allows us to maximize throughput through the three training centers at NTC, JRTC in Europe, and the JRTC, and we will be doing that with a combination of Active and Guard. So 16 Active units will go through and then four Guard. So it is exceptional training. I have been to two of those training sites in the 3-plus months I have been on the job, and they are doing high-end training against likely threats we would anticipate, consistent with the National Defense Strategy.

On your question with regard to synthetic training, virtual training, it is an initiative that is captured under one of our soldier lethality cross-functional teams. It is an important endeavor because it promises to give soldiers many, many repetitions at home station before they actually go on a deployment. So they are not engaging the enemy for the first time, if you will, on a real deployment, but actually can rehearse over and over again at home station. So it is a very important initiative to us, and we are putting money into that cross-functional team, as provided in the fiscal year 2019 funding.

Mr. CALVERT. Okay. Thank you. Thank you, Chairman.

Ms. GRANGER. Thank you.

Mr. Ruppersberger.

Mr. RUPPERSBERGER. Thank you for being here. So far, I think you have done an outstanding job in your leadership of the Army.

FUTURES COMMAND AND ARMY RESEARCH LABORATORY

Secretary ESPER. Thank you, sir.

Mr. RUPPERSBERGER. I am fortunate enough to have Aberdeen Proving Ground in my district and, by extension, the impressive capabilities of the Army Research Laboratory. As you know, the Army Research Laboratory is our Nation's premier laboratory for land forces. The Army relies on the Army Research Laboratory to provide the critical link between science and warfighter. And today, the Army Research Laboratory helps the Army to understand the implications of technology on doctrine and future capabilities and translates these applicable science and technologies in ways to ensure Army dominance.

That being said, I have been following the Army's intent to stand up Futures Command with great interest, and I am very interested in how its creation will impact the Army Research Laboratory.

And I guess, Secretary, or either one, how do you envision the Army Research Laboratory contributing to this new modernization initiative?

Secretary ESPER. Yes, sir. Well, thank you for that question. First of all, our science and technology base is absolutely critical to the modernization of the force. And so in the last several months, what we have done is aligned 80 percent of our S&T funding actually toward the six priorities that have been outlined. So that is everything from long-range precision fires through next-generation combat vehicle all the way through soldier lethality. We are looking to move over a billion dollars as well over the fit-up to do the same. And so clearly, the S&T, the Army research labs that are part and parcel of that are critical to the future.

Now, the other piece of that with regard to Army Futures Command that will continue the transformation, if you will, of the acquisition process, what we envision is that we would achieve what we call unity of effort and unity of command by having a single senior officer, a general officer in charge of the entire acquisition, big A acquisition process, all the way from concept through requirements through the acquisition and testing process.

What that would mean for the labs is that we would most likely just rewire the boxes differently so that they are reporting into the Army Futures Command. We don't anticipate any changes in locations or changes of jobs at this point, but, really, how do we rewire the boxes—because currently they are all over the Army—so we achieve that unity of command, unity of effort that promises us to be able to deliver to soldiers the tools, weapons, and equipment they need, when they need them, and at the best price for the taxpayer.

Mr. RUPPERSBERGER. Madam Chairman, schoolteacher, I yield back.

Ms. GRANGER. Mr. Diaz-Balart.

NEXT-GENERATION VERTICAL LIFT PROGRAM

Mr. DIAZ-BALART. Madam Chairwoman, thank you very much. Gentlemen, a privilege to have you here.

First, let me applaud the Army on the plan to acquire the ground mobility vehicles. I am actually really happy to hear that you are leveraging the experience of the SOCOM vehicles to get this critical equipment out to the force as soon as possible.

Madam Chairwoman, I was lucky enough in Florida to drive one of these vehicles, which were incredibly versatile and, actually, I kind of want one after I drove it, I will tell you. So, again, I want to commend the Army for setting an example for a smart and fast acquisition decision and saving taxpayers money. And so, again, I saw that firsthand.

Let me talk to you a little bit about the next-generation vertical lift. So I have read some conflicting reports on the status of this program. The Defense News suggests that the Future Vertical Lift program has appeared to, as they said, slow-rolled. Now, I also know that Under Secretary McCarthy recently said that the program is on track.

And so I do understand that it is included in your 2019 budget, which is great, but I am hoping to get some clarification on the Army's intentions and support for the program since, again, I have read conflicting reports.

General MILLEY. Thanks, Congressman. I didn't read the particular article that you are referring to. First of all, it is a joint program. It is a DOD program, because it is Army and Marine equities. Army has a heavy equity in it. So the decisions are actually not Secretary of the Army's or the Army's. It is actually a DOD thing.

Secondly is the request for proposals and all of that is going to be decided sometime in the early fall. So it is on track to meet those timelines.

The third thing is, what do we want out of Future Vertical Lift? What do we want tactically? You know, what do we want out of this thing? The helicopters we have today, the Apache, the UH-60, the 47—the 47 has been around a long, long time, since Vietnam—they are great helicopters. They are good helicopters. They are capable. The guts have been all redone, and we are going to continue to invest in those in the foreseeable future.

But the future operating environment is going to be significantly different, we think, especially if it is against a near-peer competitor, than the current operating environment. So we need an aircraft that can, first, survive. We also need an aircraft that is dual-purposed that can both be manned and possibly autonomous and unmanned, a robotic helicopter. We need an aircraft that can fly faster and further than any existing rotary wing aircraft today. And we need an aircraft that is agile, both while in flight to avoid enemy air defense and at what we call it the X or at the landing zone, in order to evade and survive any of the intense ground fire that will be coming on a hot LZ. Those are pretty stiff requirements.

So the discussion with industry is ongoing right now, and there is a variety of possibilities out there from a technological standpoint. We will know more throughout the summer and as we get into the fall to make some hard decisions. But there is no intent, and the Secretary and I are not going to stand for delays. This is an urgent need. We need to get it. It is third in our—we have six

priorities in the Army, six modernization priorities. This is the number three. If you think about what an Army does, an Army fights and wins in ground combat. And the first thing you got to do is be able to shoot long-range precision fires, and then you got to be able to move, and we move by the ground and we move by the air.

So this is a very important priority for the Army. We are committed to it, and we are going to try to keep this thing on track.

Mr. DIAZ-BALART. Thank you, General.

Secretary ESPER. And I would just add that, building upon what the chief just said, what we are doing right now reflects the different approach to acquisition that we are taking. In this case, we have two demonstrators. One has flown. I think one will be flying later. Both are largely funded by industry as prototypes with some Federal dollars.

And so it just reflects a whole new approach where we prototype, we test, we fail, we learn, we prototype, and we repeat until we narrow the requirements and we get on a much quicker trajectory to get to the end state that we want.

Mr. DIAZ-BALART. I appreciate the very clear answer.

Thank you, Madam Chairwoman.

Ms. GRANGER. Thank you.

Mr. Cuellar.

FINANCIAL STATEMENT AUDIT

Mr. CUELLAR. Thank you, Madam Chair.

Mr. Secretary and, again, General, thank you for your service and your time.

Just one question. The Department of Defense is currently going through this financial statement audit, as you know, verified count/location/condition of military equipment, real property, inventory, testing security vulnerabilities, and our business assistance, validating the accuracy of personnel records. It is going to take a while to get this hopefully clean audit.

The financial statement audit will help drive, we hope, improvements in standardized business and process and basically know what we have, you know, because, as you know, half of the discretionary funding goes into the Department of Defense.

Mr. Secretary, and I guess for both of you, but especially you, Mr. Secretary, tell us your experiences and the views of this Department of Defense audit and tell us, even though this is an initial review, if any actions have been taken by the Department that has helped the Department of the Army.

Secretary ESPER. Yes, sir. Completion of the audit is a top priority for me. Having been through audits in the private sector, I recognize the value of them, in terms of what they teach you, what you can learn from them, how they can help you think better in terms of how you employ your resources and manage your resources to accomplish your mission. In this case, it is readiness and future readiness.

And so the Army is off to a good start. We are looking at what needs we need to make. So over the previous few years, we have made a number of changes to improve our audit ability, whether it is better documentation control, improving our IT systems, cap-

turing data better. So we are proceeding along. I get updated on this monthly. And at every meeting I ask, what do you need from me, what support do you need from me to make sure that we complete our audit on time?

And, again, as you rightly said, I don't anticipate we will get a clean opinion this year. I think it is a process, but I am confident we will continue to learn. At the end of the day, we need to be able to account for everything that we have and what we do, and I am fully committed to that.

Mr. CUELLAR. And you said it right. You have been in the private sector, so this is key and we have got to do the same thing for government.

Secretary ESPER. Yes, sir. And part of it is making sure the attitude is one of—it is a learning event, not a grading event, per se, because there is a lot that can be learned from an audit that helps leaders really manage all of your resources better, whether it is people, equipment, dollars, obviously. It is important that we complete this.

Mr. CUELLAR. Well, following the question you ask your folks every time you meet with them, anything we can do to help you?

Secretary ESPER. The Congress has been more than generous with the fiscal year 2018 and fiscal year 2019 mark. So I think we really appreciate the funding at this point. As we go, we will be sure to keep the Congress apprised if anything comes up with regard to the audit piece. So thank you, sir.

Mr. CUELLAR. I yield back the balance of my time.

Ms. GRANGER. Judge Carter.

NATIONAL DEFENSE STRATEGY

Mr. CARTER. Thank you, Madam Chairman.

Secretary Esper, General Milley, thank you for being here. I think you make a great team in taking care of our Army, and I appreciate you very much.

We are talking about a new National Defense Strategy. It raises a new whole section of thinking on warfare with the Army. And we are looking at dealing with near-peer aggression or potential aggression and how we would face it, while continuing an insurgency war which we have been fighting now for 16 or 18 years. It takes a whole new outlook and it takes evaluation of our near-peer enemies and what we are going to do.

So my question is, give us an overview, if you could, about the changes in the Army relative to the near-peer enemies, and then as we continue, how will we continue to deal with insurgency and that issue too.

And one of the things I am very interested in is, because there at Fort Hood, we have a lot of Abrams tanks and a lot of Bradleys, and they have done a great job for us and been great for our Army, but they are old. They are old vehicles. And it is my understanding from some of my reading that our potential enemies have looked at how we fight and have made improvements.

I would like for you to also talk about equipment improvements as you look down the road for this dual task we are going to have. It is kind of a big question. But if you could outline it quickly, give

us some kind of idea of where you are. I think it is important that everybody understand it.

Secretary ESPER. I will take first stab at that, and I am sure the chief will have a lot to contribute as well. As you rightly outline, Mr. Carter, with what the NDS presents, we have to now deal not only with the high-end, very complex threats, strategic competitors of Russia and China; we still have to be prepared to deal with the Irans and North Koreas, and at the same time deal with irregular warfare. So unlike maybe what had happened in the post-Vietnam era when I entered the service, we don't have the luxury of just focusing on one threat. So, instead, we have to now maintain that core competency.

At the same time, as we open up our aperture to deal with the high-end threats, there are a number of things that we are doing to make sure we are ready. So we talked earlier about fully maximizing the throughput of units to the combat training centers. That is number one.

Second, relevant to today's discussion about the budget, we are converting an armored brigade combat team. We are, by the end of 2019, building another armored brigade combat team, again, to deal with the high-end threat. We are upgrading our Strykers, Bradleys, and vehicles, Bradleys and Abrams, making them more lethal, making them more survivable. We are investing in our aviation fleet. So all these things we are doing to deal with the high end.

And then, of course, we have mentioned several times our six priority areas for modernization. It begins with long-range precision fires, making sure we have the ability to reach out and touch the enemy at greater distances so that we can help the Air Force, for example, with the suppression of enemy air defenses all the way down through, as you mentioned, building the next-generation combat vehicles. Because we are reaching the point in time, certainly with the Bradleys, where we are out of power, if you will. They are getting too heavy to do some certain things. So that is why next-generation combat vehicle is another one of our priorities.

General MILLEY. Thanks, Congressman. I would just add that, you know, you rightly point out the National Defense Strategy. It is a solid document, by the way. You know, I don't know how many know the background of it, but that is very much Secretary Mattis' document. His voice is in it. He penned it. He pretty much singularly authored that document. We, the Joint Chiefs of Staff, have had a lot of input to it. Many other staffers have had. We think it is a solid document and accurately outlines the way ahead for not only Department of Defense but to extrapolate to the Army, specifically, the reintroduction, I suppose, of great power competition at both levels below outright war and then potentially in conflict.

So we have got to shift gears as a Department of Defense and a Department of the Army, and we intend to do that. At the same time, we have to sustain the levels of effort, fighting a counter-insurgency and a counterterrorist fight against a very aggressive nihilistic enemy that wants to destroy Americans and their interests. So we have to be able to do both simultaneously, and we think that this budget helps us to do that.

And in order to do that, we have to improve our readiness for today's fight and we have to modernize for tomorrow's. And we think that this strategy is balanced that is in the 2019 proposals, and we think we can get there in pretty good shape, barring unforeseen events in the international environment.

Mr. CARTER. Thank you. I yield back.

Ms. GRANGER. Ms. McCollum.

ARMY AVIATION MODERNIZATION

Ms. MCCOLLUM. Thank you, Madam Chair. And thank you, gentlemen, for being here today and your service to our Nation.

I would like to get your thought on a few things. We have been talking a lot about the new National Security Strategy, and that also includes the Guard and the Reserve. And I would like to dig in a little more about the Army's aviation modernization program and how that all fits together.

So we know with the increased global requirements and high operating tempo that it has put a strain on readiness and modernization efforts, especially with respect to aviation, and some of the questions have related to that. And part of that has been past funding by this Congress and timely budgets, which we are beginning to address.

So I would like to know, as you describe what is in the fiscal year 2019 budget for the Army aviation modernization, how the Army plans to go forward in the decade, especially now that we are going to have the funding, hopefully, at least for the next 2 years, better in place.

There has been concern from Reserve components that the Army's direction here may leave them without the funding needed to complete the modernization efforts for the UH-60 Black Hawks. And I also, from the Army Times, November 9, 2017, was concerned when I read that the Army's goal for training flights per hour per crew is 14.5 hours to reach collective readiness at the battalion level, but the service's Active component is only getting 10.8 hours, while the National Guard is getting 6.4, and the Reserve is getting 7.8.

So could you gentlemen tell me, with the increased funding and how we are moving forward, how the Active component will, you know, as it continues to rely and rely heavily on the Reserves and Guards as an operational force, how are you going to ensure that they also see the full benefits of this modernization program?

General MILLEY. Thank you, ma'am, for the question. On aviation, the last couple of years, Congress has been very generous to us, and we put a lot of money into aviation, both in 2017 and 2018. And for 2019, for this request, we are asking for money to remanufacture another, I think it is 48 Apaches, to buy 12 additional new Apaches. We are asking for additional moneys to procure additional UH-60s and to modernize the UH-60 fleet as well as the CH-47 fleet.

Aviation is the biggest and most expensive, outside of MILPER, outside of the payroll, it is the most expensive part of the Army budget. And we think that we are putting an adequate amount of money into aviation for both the Active and the Reserve and Guard in order to make sure that they are properly equipped with the

best—this is barring Future Vertical Lift. This is the current systems.

The second piece you mentioned about the training, the flight hour program, we think, historically, that 15—14, 15 hours is about what is necessary to maintain the highest level of combat readiness for a rotary wing aviator. That would apply, those numbers would apply to Active component, because that is where you want to get them to what we call C-1. So we want them at the highest level of readiness.

The National Guard and Reserve are not resourced, nor are they planned, to be at C-1 prior to mobilization day. They are, by design, planned to be at a lesser level of readiness prior to mobilization day. And then upon mobilization, there is a period of time for each unit—and we have it by unit—we have a period of time for them then to reach C-1 prior to them deploying into combat.

Ms. MCCOLLUM. Madam Chairwoman, because my time is up.

I would like to see that breakdown—

General MILLEY. I will be happy to.

Ms. MCCOLLUM [continuing]. Because I am very concerned about with the OPTEMPO, sometimes the shortness in deployment.

General MILLEY. Sure.

Ms. MCCOLLUM. And especially with the equipment that they are operating with. So if you could provide that to our staff, I would appreciate that.

General MILLEY. I will be happy to give you all the detail on it, absolutely.

Ms. MCCOLLUM. Thank you very much, gentlemen.

General MILLEY. Thank you, ma'am.

Ms. MCCOLLUM. Thank you, Madam Chairwoman.

[The information follows:]

IFR #1—Aviation Readiness and Flying Hours by Component

(1) In FY18 the Army programmed \$1,579 billion for the Flying Hour Program in the President's Budget broken out as follows; \$1,188 billion for the Regular Army, \$333M for the Army National Guard (ARNG) and \$57.8 million for US Army Reserve (USAR). The preponderance of this funding goes to Combat Aviation Brigades (11 Active/10 Guard/2 Reserve) but the Active Component also funds undergraduate and graduate flight training (flight school) for all three components.

This funding provides for company to battalion level collective training readiness in the Regular Army and Platoon level collective training readiness in the Reserve Component prior to mobilization. The Regular Army builds and sustains their readiness over one year while the Reserve Component builds their collective training proficiency over five years due to the number of available training days in each year. The following chart breaks out the funding and how many hours per crew per month each component can be expected to fly with their programmed resources.

Active Hrs/Crew/Mo.	10.6 hours*	ARNG Hrs/crew/Mo.	7 Hrs	USAR Hrs/Crew/Mo.	6.5 Hrs
MTOE Rotary Wing funded (11 CAB).	\$803,446	10 eCAB	\$308,412	2 eCAB	\$50,521
TDA Rotary Wing, Fixed wing, UAS.	\$385,460	TDA + FW	\$24,749	TDA + FW	\$7,349
Total Funding (\$000K).	\$1,188,906	\$333,161	\$57,870

MTOE: Modified Table of Organization and Equipment (Primary combat units)

TDA: Table of Distribution and Allowances (Staff and support units)

*Note, due to pilot manning shortages in the Regular Army, on-hand air crews are flying 12 hours or more a month. In FY18, all Aviation units are meeting their readiness objectives.

(2) It takes a Reserve Component unit approximately 30 training days post-mobilization to achieve Battalion level proficiency and 60 Days to achieve CAB level proficiency.

(3) Aviation modernization is ongoing in every Army component and across our aviation fleets. Currently, UH-60 Blackhawk A, L and M model aircraft are operating in both the Regular and Reserve Components. The Army continues to execute plans to modernize our UH-60 aviation fleet which includes replacing all UH-60As in COMPO 2 by FY 23 and in COMPO 1 by FY25. This modernization effort includes upgrades, which will result in a combination of UH-60L, M and V aircraft. The Reserve Component has received their full authorizations of CH-47F aircraft, the most modern model in the Army inventory.

Ms. GRANGER. Chairman Rogers.

KOREA PENINSULA

Mr. ROGERS. Korea, we have some 24,000 troops on the peninsula, including 15,000 Active Army. In view of the unusual activities in the last few months, i.e., North Korea, what changes have you made, if any, in preparation for what may come? Mr. Secretary.

Secretary ESPER. I will take first stab at this. The chief in his joint chief's role is probably more fluent on this. I could tell you that with regard to Korea, we hope for the best, but prepare for the worst.

And so one of my first trips on the job was to Korea, where I spent about 2 days on the peninsula meeting with our commanders all the way from Seoul down to the southern end of the peninsula to get a good feel for our readiness. And I can tell you that everybody is working hard to ensure that we are ready, that we are doing what is necessary to strengthen the hands of our State Department, our diplomats, if you will, and to make sure that we have all options available for our decision makers.

Mr. ROGERS. General.

General MILLEY. Congressman, I don't want to do a cop-out, but I would like to actually come by and brief you in a classified session on the details of what we are doing. The headlines, I suppose, or the brief version in unclassified, we continue to do and we will continue to do a significant amount of training for contingency operations on the Korean Peninsula, both on the peninsula itself with the units that are stationed there, but also the units in the region. We have got, roughly speaking, 70,000 Army soldiers in the PACOM AOR, and another 30,000, depending on exercise schedule. So training is key.

And then in the continental United States, about, I guess it was a year, 18 months ago, we gave out guidance to our units that we would designate selected units to increase their readiness training, specifically oriented towards high-end combined arms warfare, not specific necessarily to Korea, although it would be applicable to Korea. And we have been running those units pretty hard, getting them to a much higher level of readiness that I can explain in some detail to you.

In terms of equipment, we have ensured that all of the prepositioned stocks are full up. We have worked hard at replenishing munitions. I can give you the details of those in a classified session as well. And then we have made sure that we have increased the personnel fill for the units that are both there and the units that are expected to first respond.

But we, the Army, have done a tremendous amount, in coordination with the U.S. Army Pacific, with Admiral Harris in PACOM, and General Brooks, who is the commander on the peninsula, we have done a tremendous amount over the last 12 to 18 months or so in preparation for any possible contingency so that the President has the widest latitude for options, if needed.

MILITARY RELATIONSHIP WITH SOUTH KOREA

Mr. ROGERS. How would you rate the current state of our military relationship with South Korea?

General MILLEY. It is very good with the ROK Army. Our Mil-to-Mil relationship with the Republic of Korea is excellent. And I go over there probably every 4 or 5 months. We have had a long-term 70-year relationship with the ROK Army, and we are very, very solid. We are shoulder to shoulder with the Republic of Korea.

Secretary ESPER. And I have had the chance to meet, when I was there, with the minister of defense and with ROK generals. My assessment was the same, and it was the assessment also given to me by our commander there, General Brooks.

155-MILLIMETER ARTILLERY SHELLS

Mr. ROGERS. In closing and quickly, I noticed that you are requesting a huge increase in 155-millimeter artillery shells. 2018 was 16,500. The request now is 148,000. I am an old 155 artillery guy in the Kentucky Guard, so I have got an affinity for 155 shells, but what is going on here?

General MILLEY. Well, as I survey as chief of staff, as I survey the world situation—and there are lead times to procurements—I want to make sure that the United States Army has sufficient ammunition stocks, not just 155, but the other types of preferred munition and Precision-Guided Munition, et cetera, but 155 in particular because the United States Army has been and still is a fires-based Army in order to create opportunities for maneuver and movement.

So artillery is fundamental to our ability to do that. And in the event of a contingency, artillery munition consumption rates would be really high. So I want to make sure that the ammunition stock-piles are significant enough to withstand any contingency. Hence, the significant amount of 155.

Mr. ROGERS. It is 10 times what you did in 2018.

I yield back.

General MILLEY. That is correct, Congressman.

Ms. GRANGER. Thank you.

Before we call on Mr. Womack, we will be calling your office to set up a classified briefing. Everyone on the subcommittee will be invited, because I know we all have questions that you, very respectfully, need to be in a classified briefing, so—

Mr. Womack.

PERSONNEL

Mr. WOMACK. Thank you, Madam Chair.

And my thanks to the Secretary and to the chief, who are doing remarkable work. And, of course, I am kind of partial to the Army, so I like what they are doing.

And congratulations, by the way, on bringing the Commander in Chief's trophy back to the Army side. I know my Navy friends are probably, and even my Air Force friends, probably a little bit chagrinned about that, but it was about time, and I know it is particularly important to the Secretary.

I want to talk about manning for just a minute. Even though we have got a lot of technology, a lot of really cool stuff that we use, that the warfighter is able to take advantage of, and more on the way, we are still a people business. And my concerns have always been about the amount of money that we spend and let's just say invest in our people, from entry level to some of these mid grades, and then how we lose them in the retention battle.

And my concern is even enhanced a little more now that we have got a Tax Cut and Jobs Act bill passed. And there is clearly a movement in the economy to bring more jobs back home, and that is going to put pressure on wages. Wages are going to go higher, I believe strongly, and that is going to be an incentive for people who might be predisposed to joining our military to take a job in the civilian sector.

So, Mr. Secretary, if you would, just kind of let me know what your thoughts are on these issues and if my concerns are founded.

Secretary ESPER. Yes, sir. It is a very good question, and I like your choice of words: "invest." It is how we need to think about how we access soldiers and officers into our force.

I think on the first part, with regard to our enlisted ranks, as you know, this bill will help us grow and strength, which is critical to meet the demands out there. But one of the challenges we have, which are widely reported, is that we have anywhere between only 25 to 30 percent of America's youth could be eligible to serve, and less than 5 percent probably are eligible and have an inclination, proclivity to serve. And so that makes things more challengeable, which makes it all the more important that once we get them into the service, that we do our darn best to retain them.

And so there are a number of things we need to do. Of course, is invest in their professional development. We need to be sure to take care of their families, which is why one of the priorities we have highlighted is taking care of their families.

But another part of this, and I think you and I may have spoken about it previously, is I have stood up what I call a Talent Management Task Force to really look at how do we manage people differently in the 21st century. So rather than the typical up-and-out type of system we have now, how do we manage people based on their knowledge, skills, and behaviors, marry it up with their preferences, and make sure we look at them more as individuals as we manage them through their career so that we can retain them longer, particularly in that critical period between the 6- and 8-year mark, where, at least for mid-career or for officers, they may think about getting out because they are looking for other opportunities or, like you said, the job market is better.

So we have to be more flexible on that side as well in terms of allowing lateral movement in and out of service, maybe to the Guard and Reserve, and thinking about different career path options. This is most specifically outlined when we talk about the cyber force. So a number of things we could do, but you have hit

the nail on the head. We have to think about people as investments.

Mr. WOMACK. General Milley, on that same subject, we have been engaged in a type of conflict that has been driven primarily by the small unit leader, which has been really good for the development of our small unit leaders. Now, a lot of these leaders are matriculating up through their field grade and on into general officer positions. And I would just kind of throw the same question out to you. Do you ever get concerned about losing some of this great talent that has been so vital in the war fight so far that we could lose them to private sector opportunities?

General MILLEY. I am always concerned about that, Congressman. We want to retain the best and brightest of talent. And you are correct that there is a tremendous amount of institutional experience now at the small unit level in combat fighting. So the short answer is yes, we are always concerned about it. We monitor it very closely.

So what we have seen so far is we do not in the junior officer level have a, quote/unquote, brain drain. There is a normal attrition at about the 4- or 5-year mark where a lot of officers choose to pursue another form of employment. Many go into the Guard, many go into the Reserve, and then they seek civilian employment, and others just get out. But there is not some dramatic pause from or break from the path in terms of the normal trend lines.

What is interesting, though, is those officers and noncommissioned officers and soldiers who actually have the most deployment time in theatre, in the combat zones of Iraq, Afghanistan, Syria and elsewhere, they tend to reenlist, actually, at a higher rate. And that is an interesting fact that has come out in the last 14, 15, 16 years.

So the idea that they are being driven out of the military for some reason, I don't believe that is the case, based on the data I have seen, but we are always concerned about it. We want to retain the best in our formations.

Mr. WOMACK. I thank the gentlemen for their service.

Madam Chair, I yield back.

Ms. GRANGER. Thank you.

Mr. Graves, and then Mrs. Roby.

SECURITY FORCE ASSISTANCE BRIGADES

Mr. GRAVES. Thanks, Madam Chair.

And thanks again for joining us and for your responses today. And I really just want to get your feedback a little bit on the Security Force Assistance Brigades, one of which, the 1st brigade is housed in Benning, in Georgia. And no doubt that advising and assisting our allies is a key part of the mission.

Can you just share with us a little bit about what you have learned and what you expect and what you hope to see in the future in using these various brigades?

General MILLEY. Thanks, Congressman, for that. It is our assessment that we are going to be in the train, advise, assist of indigenous partner nations' militaries for some time to come. We have been doing it pretty regularly as a Nation for well over a century. If you think back at the big ones, the ROK Army, the Korean,

South Korean Army, the Army of South Vietnam, and many, many other armies around the world have been advised by the American Army over the years. So it has always been a fundamental mission of the United States Army.

Many times it is defaulted to the United States Army Special Forces, because they have excellent expertise in foreign internal development and advising. But in today's world, we think that the mission profile of train, advise, assist exceeds the capacity of Special Forces. They are running at a very, very high OPTEMPO. So Special Forces is primarily now, not exclusively, but primarily involved in training and advising host-nation special forces, and we need to fill the gap to advise the host nation conventional forces.

And what we determined, what we have been doing for 16 years is ripping apart our Regular Army or National Guard brigade combat teams that are designed or combined now as maneuver, we have been ripping them apart to feed an advisory mission. So, for example, today, we have got five brigades in the Middle East doing that, we have got five preparing, and you got five just coming home. So about 15 out of, you know, 30 brigades in the active or 58 in the total are wrapped up in that mission profile.

We need those brigades to train them on their design mission. So what we decided to do is we wanted to produce a better product of adviser rather than just sort of an ad hoc approach to it by ripping units apart, create a professional advisory unit, and we are calling it an SFAB. And it is all about the people. They are individuals who are highly vetted. They are meeting the same entry requirements that you have to meet to get into the Ranger Regiment. They are getting full background checks. And significantly, they have already served in the duty position they are serving as an adviser. So they are on their second company command, their second battalion command, their second brigade command, second time as a first sergeant and so on. They are not coming—we are not ripping them out of the units. This is after they have completed their assignment in a regular unit.

So you are getting a high-quality product, and I think we will see over time for the indigenous conventional forces a better adviser capability, and we will recoup the readiness value of bringing the current brigades back home to get them trained for their organizational design mission.

And a third big strategic benefit of these Security Force Assistance Brigades is that they are built upon the inherent chain of command of an infantry brigade without all of the soldiers. So they are E-6s and above, they are all NCOs and officers, and they are designed to look like a chain of command of a brigade.

So in a national emergency, if the United States needed to rapidly expand—we are creating five of these in the Regular Army, one in the Guard. If we needed to rapidly expand by, say, six brigades, five or six brigades, we would take soldiers through basic training and AIT, shove them underneath there. And you will have a brigade in relatively short order, about one-third of the time it would take to create a normal brigade.

So you get these three big strategic benefits from these outfits. The first one, as you noted, is stood up at Benning. It deployed last week or 10 days ago or so. They are in the midst right now of get-

ting into their battle space. And the second one is going to stand up at Bragg. We haven't determined yet the stationing for the third, fourth, and fifth and so on.

But we think it is a good idea. It is a good program. We think that they are getting good training and proper equipment. And we think that their concept of employment is sound, and we think it will reap a significant amount of benefit in the years to come.

Mr. GRAVES. Great. Thank you. Thank you for that explanation. And, Madam Chair, I yield back. Thank you.

Ms. GRANGER. Mrs. Roby.

ARMY AVIATION

Mrs. ROBY. Thank you, Madam Chair.

And to both of you, thank you for your service to our country. We appreciate it very much. Thank you for your candor here with us this morning.

As you know, I represent southeast Alabama, and the people of southeast Alabama are very proud of the home of Army aviation at Fort Rucker. So a couple questions, and then I will let you respond.

And I appreciate, Mr. Secretary, the visit by phone the other day, and I kind of laid this out for you, so, you know, we can talk further about it. But I am real concerned about why the President's fiscal year 2019 budget request for aircraft is \$3.8 billion versus the actual spent in fiscal year 2017 of \$4.9 billion.

We continue to also be concerned about retention of Army aviators, and also want to make sure that the budget is a reflection of what needs to be done at Rucker to keep up with a student load that will then help with whatever missions we have. I mean, clearly, we don't deploy without Army aviation, so we want to make sure that student load is a reflection of the needs of the Army.

STRYKERS

And then my second question is, I am concerned about the funding for the Stryker vehicle in the Army's fiscal year 2019 request. It is my understanding that the Army also has operational requirements for additional brigades of improved Strykers. And so a lack of funding for that would certainly put the industrial base in jeopardy.

And so those are my questions, and I will be quiet and let you all respond. But, again, thank you so much for your service to our country and for being here today.

Secretary ESPER. Thank you, Mrs. Roby. I will take the first one, aviation budget. I know the chief can speak to the retention piece, then we will move to the Stryker.

I did track down the number. So you are right, the fiscal year 2019 request for aviation is \$3.8 billion. The fiscal year 2017 enacted was \$4.9 billion, but what we requested in fiscal year 2017 was \$3.6 billion. So the data reflected the additional generosity of the Congress to put money in. So that is why it looks like a—so it is not a plan decrease by the service. What we had planned was a steady increase, if you will, to continue to invest in aviation assets. That is number one.

Number two is, we find at this point, because of the investments we made in previous years, the bump-up in 2017, that Army aviation across the board is in pretty good shape, certainly relative to our armor, our Strykers, et cetera, et cetera. So we find ourselves in good footing. We are getting very close to meeting our aviation objectives in terms of the fielding goals.

And then the other thing—I think this is due, again, to the folks at the Pentagon doing the acquisition—is they made some good decisions. So, for example, on UH-60, the procurement is a multiyear procurement of aircraft, which saved us as a result over a half billion dollars. And so that meant we didn't have to invest that up-front.

So a number of things are impacting both why you see the trending line as you read it, but also the solid state of aviation funding. And then, of course, as we have talked today, one of the things we are trying to do in the 2019 budget is really, consistent with the National Defense Strategy, make sure we are investing in conversion of the Army, of the armored brigade combat teams. We are looking to create another one. We are trying to fill our prepositioned stocks of the brigade combat team. We are doing upgrades to our Bradleys, Abrams, and other vehicles, because they are just not in as good a shape, if you will, as the aviation fleet.

General MILLEY. Congresswoman, for the pilots, what I have seen is not so much a retention issue as a production issue. We are short by our pilots, but we are at 94 percent on warrant officer pilots for rotary wing aircraft. So we are actually not in that bad a shape. However, that 94 percent means we are short several hundred pilots. So we are not where we would like to be, which is 100 percent, but it is not so much a retention as a production issue.

And you rightly point out the student base down at Fort Rucker. We are filling all the scheduled seats and we are monitoring all of that very, very closely. And we are very sensitive, because of the amount of training that goes in to train a pilot, and we know that there is a heavy investment in that and we want to continue to make sure that we don't drop off on it. I know some of the other services with fixed wing pilots are challenged on retention, but ours is not so much retention as it is a production issue.

On the Stryker piece, it is our intent to continue the Stryker upgrades. However, what you see reflected in the budget, what we did last year was put money in there for the Stryker lethality upgrade. And now what we want to do is we want to get the feedback from the pilot program that we are running right now over in Europe. We want to get all the feedback from the testing and the prototyping and so on and so forth and then adjust based off of that. We expect that feedback sometime over the summer, and then we will adjust and determine which way we want to go on the remaining Stryker brigades.

Mrs. ROBY. Thank you.

Ms. GRANGER. Thank you.

Ranking Member Visclosky.

STATE PARTNERSHIP PROGRAM

Mr. VISCLOSESKY. Thank you, Madam Chair.

Secretary, first of all, I want to thank you for your comments on the audit and audibility that Mr. Cuellar brought up and the fact that you are very serious about it. And as I have said many times in this room, it is not the audit itself, it is the ability it gives you to make informed decisions. But very much appreciate your addressing that.

Secretary ESPER. Thank you, sir.

Mr. VISCLOSEY. I have, if I could just set these out for the two of you, three questions. And, again, would not want to take time. Chairman Frelinghuysen is here, Mr. Aderholt.

The first is, we are all very proud of our National Guard organizations. Indiana has partnerships with two different countries. Relative to the European Deterrence Initiative, how do the Guards in the State Partnership Program cooperate, play into what the Army is doing in Europe?

ASIA

Second, when we look at Asia, I think too often we think of maritime, Navy, Air Force, but the Army has a clear role. Setting aside the Korean Peninsula, any particular activities you would draw our attention to that you are involved in?

DEFENSE STRATEGY

And the last—and, again, if you could just touch on these—is, with the new defense strategy that I am pleased the Department has initiated, we talk about Russia and China. We talk about Iran and we talk about North Korea, and then it is other very important issues. Has it put stress on the Army in particular as far as its activities in Afghanistan? Are there problems that has created as far as a sense of priority? Thank you.

Secretary ESPER. Thank you, sir. If you don't mind, I will take the first one, and maybe the chief can take the second two.

So, as you know, my 21 years of service, 10 were on Active Duty and the remaining 11 were in the Guard and Reserve. So I have a great affinity for the Guard as a former guardsman myself.

And I will tell you, when I went to Europe, I think it was in January, I was able to visit Belgium, Germany, Poland, and Ukraine. And in Poland, I was very impressed because there was a Guard unit there from Illinois, of all places, training, conducting training there, and they were well welcomed and doing an incredible job. I found the same thing, by the way, when I went to Ukraine. It was actually the New York National Guard that was training the Ukrainians on better tactics, techniques, and procedures, if you will, consistent with what we do with NATO.

So the Guard is performing a critical role. From the time I left Active Duty in 1996, they have moved certainly from a strategic Reserve to an operational Reserve to an operational force. And everywhere I go—and I am always reminded of my visit to Afghanistan just before Christmas, where I sat around with a leadership team of a brigade combat team. And you wouldn't know it unless you looked at their patches, but they were from all three components, but seamlessly integrated, each performing their roles side by side, but there were Active, there were Regular Army, Guard, and Reserve. And so they are doing a tremendous job.

And I guess further to your point, what I found is where States have these particular partnership programs with other countries, that has been particularly helpful, because there is a longstanding relationship in many cases where they have been working together for many years. And so there is a great ease when they have to deploy and they already have a relationship built up. And I know I had that conversation with the Poles in particular where there was just an easy transition as our guardsmen were working in Poland on our deterrence initiatives there.

General MILLEY. I would echo all of that. Congressman, the State Partnership Program, as you know, has been a long-term program. It started in the early nineties, and the States have affiliations with various countries around the world. A very, very successful program, particularly in Europe, as a subset of the broader EUCOM command of General Scaparrotti's engagement strategy in order to build partner capacity.

For the EDI, the European Deterrence Initiative, the Army plays a significant role in that. Of the \$6-plus billion that it has been increased from last year's budget, I think the Army has allocated \$4 billion, \$4½ billion of that. That is significant. The purpose of the whole thing is to deter further Russian territorial aggression in Europe. We saw Georgia. We saw Crimea. We saw what they are doing in eastern Damas.

So a strategic decision was made to deter any further territorial aggression. In order to do that, it requires a joint force. So there is elements of the Navy and the Air Force and Marines as part of the EDI as well. But the Army has a big chunk of that, because the best form of deterrence, frankly, is the deterrence that you can see on the ground. And if you know you can't achieve your objectives on the ground, then you are likely not to try to attempt to get those objectives.

Mr. VISCOSKY. If you could address Asia.

General MILLEY. I am sorry.

Mr. VISCOSKY. If you could address Asia.

General MILLEY. As I understood, the question was, is the China issue impacting or increasing stress on—

Mr. VISCOSKY. I wouldn't even say China. It is just we think of Navy, we think of Air Force, because of the projection. Setting aside the Korean Peninsula, just to highlight some of the other activities and important duties or—

General MILLEY. Well, in the Pacific, again, we are a global power and the United States Army is a global Army. So we are not committed to one theatre versus the other, and we have to retain capabilities as a Nation as long as our strategies remain as they are, to be able to engage worldwide.

So in the Pacific, we have got, roughly speaking, as I mentioned earlier, about 70,000 or so U.S. Army soldiers forward-stationed in Korea, forward-stationed in Hawaii. We have soldiers up in Alaska, and then we have a large significant amount that come out of the operational force in FORSCOM in the event that we need to surge forces into the Pacific.

So there is a very significant Army capability in the Pacific. The purpose of that is stability, building partner capacity, assuring our allies, and deterring any particular opponent. The Pacific is heavily

weighted towards naval capabilities and air capabilities, as it rightly should. However, the Army plays a very, very significant role, as you know, in the Pacific.

Mr. VISCOSKY. Well, my sense is the assurance to our allies is a very key role there so no one gets nervous.

General MILLEY. It is absolutely critical.

Mr. VISCOSKY. If I could just turn you to Afghanistan and with the new defense strategy, if you would, any stress or pressure as far as what you are doing in Afghanistan, budgetarily or personnelwise?

General MILLEY. Well, in Afghanistan, you know, the numbers that we have in Afghanistan, and we are putting in the 1st Security Force Assistance Brigade the other day. Our strategy in Afghanistan is to continue to train, advise, assist, enable the indigenous military force of the Afghan Government, so the Afghan National Security Forces. That is important. It is not in and of itself the only solution, but it is important.

The other parts of this are economic development, rule of law, good governance. Those are outside the purview per se of U.S. military forces. Our job is to assist the ANSF in order to protect and stabilize the internals of the government. It has been a challenge for a considerable length of time, as you know. President Trump has recommitted in this strategy to sustaining the U.S. level of effort.

Key to the overall strategy, of course, is what is going on on the other side of the border with Pakistan. It is a very complex situation, but we the military and we specifically the Army play a very, very heavy role in train, advise, assisting our Afghan partners. We think we are able to do that now, and we think we are going to be improving on that here in the coming year.

Mr. VISCOSKY. Thank you very much.

Ms. GRANGER. Thank you.

Mr. Aderholt, I apologize, I didn't see you come in.

LONG-RANGE HYPERSONICS WEAPONS

Mr. ADERHOLT. No problem. Thanks.

Thank you all, as my colleagues have said, for being here. We appreciate your service.

And when you think back on the days of muskets, it would have been a surprise, I guess, to a lot of the servicemembers back years ago to imagine a rifle that is accurate up to 875 yards, as we have today. But in this time of increasing long-range threats from our adversaries, I don't think any of our services should be excluded from a mission simply because of its range.

But the concern that many of us has is about the frequency of hypersonic testing from Russia and China. Also concerned about the speed at which North Korea might prepare a missile for launch. Our own future systems may include weapons in the Air Force and missiles launched from submarines, but some of that work might take 20 years to actually field. In the past 2 years, our combatant commanders have confirmed the positive potential of long-range hypersonics weapons of our own.

General, let me pose this question to you. It is an operational question. If the Army were provided sufficient resources and were

asked to prepare a long-range hypersonic weapon launched from U.S. territory, could you build upon our two successful hypersonic flight tests done through cooperation between SMDC and the Navy and prepare an early operational land-based capability by 2022, which is directed in the fiscal year 2018 NDAA?

General MILLEY. Thanks for that question. It is an important area of S&T and R&D that we are pursuing very quickly. As you rightly point out, two significant adversaries, China and Russia, are moving out in the development of hypersonic weapons. We acknowledge that.

We, the Army, have as our number one priority for modernization long-range precision fires. A subset of that is the hypersonic piece to it. It is in S&T and R&D. I don't want to say 2022, because I haven't seen the results of the S&T and R&D yet.

But I do believe that it is technologically possible, and I believe we will be able to test and then acquire and procure long-range precision weapons that go significantly longer in range than any existing artillery system in the Earth today. We are pursuing that, and I believe it is possible. I don't want to confine myself to a date of 2022, though. I haven't seen the research yet. A hard date.

Secretary ESPER. I would add I was at SMDC a few weeks ago. Very impressed by what they are doing. They are very confident in the promise of hypersonics. And as I came back, as you may have heard, I meet frequently with my fellow service secretaries, and this is one of the technology areas that we discuss, about how we can collaborate to make sure that we all have the—we can share that same information to get to the solution quicker, because there is so much promise in hypersonics.

Mr. ADERHOLT. Mr. Secretary, there have been various opinions expressed in recent years about what is treaty compliant and what is not, as well as whether our adversaries have already broken the treaty, such as the INF.

If I understand correctly, part of the equation is whether a weapon goes into exoatmospheric. Can you provide to the committee in the next few weeks a statement at the secret/TS level on what, if any, changes to U.S. law or treaties are necessary to field a long-range hypersonic weapon launched from U.S. territory?

Secretary ESPER. Yes, sir, I will do that.

Mr. ADERHOLT. Thank you, I yield back.

Ms. GRANGER. Chairman Frelinghuysen.

ARMY FUTURES COMMAND

Mr. FRELINGHUYSEN. Great. Sorry to be a little late, Mr. Chairman.

Congratulations, Mr. Secretary, on your process through the Senate.

And, General Milley, I was so late I missed a few nice comments you said about me. Thanks so much.

Thank you both for, you know, the remarkable things you do to look after our men and women and all of our military for, as you may know, I for a number of years, almost my entire time on the committee, I was sort of the Army guy on the committee. Everybody had their own people, Marines and the Air Force. I remember, you know, Jack Murtha and everybody had—but I was sort of the

Army guy. I don't apologize. We were always on the short end of the stick in terms of money and things of that nature.

So I have had a chance to sort of take a look at some of the systems we have invested in, and I think the figure is like \$32 billion we have invested in a variety of things: Comanche, Crusader, Future Combat Systems. I can remember General Odierno saying, well, it is only seven more years. And I would say, yes, I am right behind you.

I know you have got a different sort of mode of operation you are moving towards, what we call the Futures Command, which I think conceptually is supposed to sort of get us out of the bureaucratic restraints. You are going to be—and I have said this to the other Secretaries, Secretary Spencer, and Heather Wilson was in yesterday. I don't like the expression that you are going to be flush with money, but you are going to have a lot of money. I know you have indicated before I got here you are appreciative of the flexibility we are giving you to spend it. But these would perhaps be some of the best times you might have. How can you assure the committee that these dollars are going to be spent wisely?

Secretary ESPER. Yes, sir. Thank you. It is a great question. And we certainly, as you said, appreciate what we are seeing in the 2018 and 2019 appropriations, and recognize that this is a moment in time that we have to capture and make very good use of, not only because it may only be the moment, but we need to build—we need to build confidence with Congress and with the American people. At the same time, this is a chance to also, not only change our processes within the Army, but change the culture as well as we look at acquisitions.

So, to that end, that is why the Army Futures Command is a critical component, but we are impatient and speed is critical, which is why we have these cross-functional teams stood up now across these six areas, beginning with long-range precision fires, to include Next-Generation Combat Vehicle, actively working, either testing prototypes we have right now, such as Future Vertical Lift, or developing prototypes so we can quickly get the requirements down.

Part of what we want to do is get requirements down from 5 years to 12 months. And we want to get back to an era where it didn't take us 10 to 15 years to build a platform, but it takes us 5 to 8 years. And so this is the time. As you see from our budget, we contribute—or we invest over 18 percent of our funding in procurement to get that way, to begin the prototyping.

At the same time, recognizing the current challenges of readiness, we are upgrading our armored brigade combat teams, making them more lethal. Same with the Stryker vehicles. We are converting an ABCT and we are building another one. So a lot of investments across the board to deal with the near-term challenges, but begin now making those downpayments on the future force, a more modern force, and in a much quicker timeline.

SPECIAL FORCES

Mr. FRELINGHUYSEN. I don't think there is a great enough appreciation for the work of our Special Forces. And often we invoke the Special Forces, and they do remarkable things around the world.

We often invoke them that they are not hindered or restrained by some of what the big Army is restrained by. I hear it today even that they are more encumbered than they used to be.

Would you sort of talk about that dynamic? I mean, is there anything that they are doing in the way of procurement that relates to how you are designing the Futures Command? Obviously, you are impatient. You have got to break the culture. But is there anything you are building into the dynamic that relates to their ability to get things off the shelf and cannibalize systems to get more effective, you know, weapons and increase lethality?

Secretary ESPER. I will just make a quick comment, then I will defer to the chief, because, having served in Special Forces, he may have special insights. But I will tell you that in many ways we are trying to borrow if not mimic some of the procurement practices that we have seen in SOCOM, for example.

Along the same lines, what we have established in the past and then last year with either the Rapid Equipping Force or Rapid Capabilities Office are two other ways that we have tried to leapfrog a very bureaucratic process to get tools, equipment, weapon systems to the troops much, much quicker than we have in the past.

That is why I am encouraged by the CFTs. We have already prototyped and want to begin buying these next-generation night vision devices, for example. And we are moving through on a designated marksman rifle. Things that we can do much more quickly, mimicking what we have seen in the past from the Special Operations community.

Mr. FRELINGHUYSEN. Chief.

General MILLEY. Congressman, thanks. You know, 2 years ago when we first conceived of this Futures Command idea, one of the things we set out to do was to inform ourselves of what is out there today. So there were two models that we looked at intensively. One was the SOCOM model and the other was the Navy's model under Admiral Rickover, to be candid, going back in the day. So we looked at those and we drew the best practices.

In the SOCOM model, one of the things that makes them so successful—and by the way, they operate under the exact same laws, exact same rules. So there is nothing special that is done for SOCOM in terms of law or rules or authorities, but they do things slightly differently. Number one, they have a smaller scale. So they are authorized under their title to develop equipment that is unique to Special Operations, and the rest of their equipment comes from either the Navy, the Air Force, or the Army.

But in that bin of special equipment, they link the operator, the user directly with the combat developer, directly with the program manager, and they link them all to a commander, a commander at SOCOM, and his designated representative, the acquisition executive, and that speeds the process up.

So we mimicked that in today's, what we have now is six cross-functional teams. That is exactly what we did. And they are achieving great success. And the cross-functional teams are a bridging strategy until we can get Futures Command fully stood up, and then they will be embedded within Futures Command. So we are taking the best practices lessons learned that have been out there in terms of efficiency and effectiveness.

The key to the whole thing at the end of the day, though, to ensure that the taxpayer's money is spent properly, in my view, is accountability. And we must hold ourselves accountable throughout the entire system. And anyone out there who violates law, statute, intent, policy, regulations and so on in the manning, training, or equipping the United States Army's forces must be held accountable. We can't just turn a blind eye to it.

And that is another beautiful thing about Futures Command is there will be accountability, because you will have unity of command and unity of effort under one command that will do all things modernization for the Army. And that will be important, because it is such a diffuse effort right now, when something goes wrong, you say, how did it go wrong, who did this, and you start getting fingers going all over the place and who is on first, what is on second. Those days are over.

So by the establishment of Futures Command, there will be unity of command, unity of effort, and, most importantly, there will be accountability.

Mr. FRELINGHUYSEN. Glad to hear it.

Thank you, Madam Chairman.

Ms. GRANGER. Thank you very much.

We have enough time left for another round, and I would like to do that. Just be aware that you need to keep your questions succinct. And we will start with—so it would be Mr. Diaz-Balart.

SOUTHCOM

Mr. DIAZ-BALART. Thank you, Madam Chairwoman.

You know, sometimes the Western Hemisphere is kind of overlooked until things blow up. The constant bright spot has always been SOUTHCOR, and it often gets overlooked by, obviously, more high-profile commands just because of conflicts, et cetera. But clearly, its hands are always full. And whether it is counterdrug or transnational threats, they are always, obviously, incredibly busy.

So can you talk a little bit about how you intend to support SOUTHCOR's operations in the fiscal year 2019 budget?

General MILLEY. Well, operationally, SOUTHCOR demand, as you rightly point out, is significantly lower than other AORs, or areas of operation, at this time. And that changes from time to time. Earthquake in Haiti, for example, placed a tremendous demand on the United States military. Army, Navy, Air Force, Marines, everyone contributed to that relief effort. So it is an episodic thing.

As a regional engagement plan, we are supporting Admiral Tidd's regional engagement plan. We have got Joint Task Force-Bravo that is currently located in Honduras. Special Forces, specifically 7th Special Forces group, does a lot of work in Central and South America in building partner capacity and assuring our allies.

And then you have got, as you know, a lot of counternarcotic kind of drug trafficking operations within the maritime service. A lot of that is done by the Coast Guard. So there is a significant engagement in the SOUTHCOR AOR. Mexico is also important, but that comes under NORTHCOM. But we routinely engage and work very closely with the Mexican Army on things like border control and border operations, counterdrug and counternarcotics and so on.

So there is a significant amount of engagement, not only by the U.S. military, but by the Army throughout the Caribbean, throughout Central and South America, and also in Mexico. And we will continue to do that as budgeted, but it is significantly less than what you would expect from other COCOMs.

NETWORK COMMUNICATIONS

Mr. DIAZ-BALART. I just want to make sure that—and I know that you are aware of it, but I just want to make sure that there is enough emphasis there. I don't have to tell you that tens of thousands of Americans die every year because of narcotics, and so it is a threat.

And I see I have a little bit more time. Let me just—so the Army submitted a modernization plan to Congress for its network communications, but there are very little details about specific systems in the plan for the 2019 request. So can you explain a little bit about your timeline for the plan? Does the Army intend to use streamlined acquisition procedures for this or is it considering using solutions already in the Army's inventory? Just, again, some further explanation.

Secretary ESPER. And, Congressman, you said with regard to communications?

Mr. DIAZ-BALART. Yes.

Secretary ESPER. So where we are going with regard to communications falls under the network cross-functional team. It is one of the six that we have described. And what they are doing is building upon some of the current programs that exist. So one example is we are moving forward on a variety of tactical handheld radios, manpack, other radios to make sure at the cutting edge, at the front edge of the battlefield that our troops have the type of communications they need for that type of fight.

At the same time, as you know, the strategy we put forward is to halt, fix, pivot on WIN-T Increment 2. And what that will enable us to do is to make sure that we can adapt Increment 2 for the infantry brigade combat teams to make sure they have sufficient communications for the fight we see ahead.

At the same time, what the cross-functional team for the network is doing is looking at what is available in the commercial market, preferably software-based, because what we need to do as we look ahead in terms of the network, the tactical network, is make sure that we can keep up with the pace of commercial technology. This is something we have been unable to do, and unless we get on that type of wavelength, we will be forever chasing this.

So what the cross-functional team is looking at, what is happening out there in the commercial marketplace, how can we then take it, adapt it to our tactical network, and make sure that we are in a position where we can continually upgrade. The network is critical to long-range precision fires, to everything else we do across our modernization priorities.

General MILLEY. May I make a comment on that, Congressman, if I could? We have spent the better part of almost a year and a half now doing an intensive internal look at the, quote/unquote, network, of which WIN-T is just one component. And it was my conclusion, our conclusion, the Army's conclusion that the network,

as designed, works fine for a counterinsurgency, counterterrorist type fight where you are fighting primarily from static FOBs and COPs out there in the battle space, and it more or less works okay at echelons below, say, battalion company.

However, as the NDS points out, we are in an era of great power competition. And if you need a system that can operate against a near-peer competitor, a Russia or a China, or someone using their equipment, who has significant electronic warfare capabilities, who has significant cyber capabilities, who have incredible powers of observation through a variety of means, who have incredible fire support capabilities that can deliver fires, it is our estimation that the system that we were buying would not survive contact with that type of enemy on a mobile, highly lethal battlefield against those enemies.

So we said, okay, what in the system doesn't work? And whatever it is we found that didn't work, we halted it. What in the system doesn't work but can work, we decided we would identify those subsystems and fix them. And then we needed to move on to a new procurement strategy.

In the world of information technology, the commercial world is operating at light speed compared to the way the U.S. Government can do acquisition and procurement. They are light years ahead of us.

So the network's design and requirements were written years and years and years ago. The commercial world has advanced way beyond anything we wrote years and years and years ago. So that is the pivot part of it. We need to change our fundamental procurement strategy of all things information.

So that is what is behind all of this. And I know it is controversial out there. I know a lot of people are up in arms about it, so to speak. I got that. But we cannot fund a system that we know ahead of time is unlikely to work against the type of threat that we have been charged to plan against in the National Defense Strategy.

Mr. DIAZ-BALART. Thank you, Madam Chairwoman.

Ms. GRANGER. Thank you.

Mr. Ruppersberger.

RUSSIA

Mr. RUPPERSBERGER. Earlier, we discussed the need for a modernized Army to deter future adversaries and thoroughly overmatch them should a fight become necessary. That is certainly the right call, especially considering the advance of technology and the Army's need to have a long-term strategy to maintain a decisive edge in great power competition.

Now, I am very worried about the here and now, the current and short-term investments the Army is making to maintain dominance in today's threat environment. Today, Russia is increasingly belligerent and aggressive and has demonstrated more of a willingness to use its ground forces to further Putin's goals. We also have issues involving China.

My question, in the fiscal year 2019 budget, I am happy to see funding for measures such as European Defense Initiative have increased from \$4.7 billion to 2018, \$6.5 billion this year. In addition

to this effort, what other near- and short-term investments do you see in your budget plan that can deter Putin from testing our resolve?

Secretary ESPER. Mr. Ruppersberger, there are a number of things we are doing, so I will talk about armored brigade combat teams. As I said, we are converting a 15th armored brigade combat team and plan on building a 16th. At the same time, we are looking to build up our prepositioned stocks in Europe so that in the case of a contingency, we can quickly fly in and fall in on those types of stocks, a brigade combat team.

At the same time, we are making sure that in Europe, those stocks have mobile short-range air defenses that have enhanced multiple rocket launcher capabilities. We spoke earlier about the Strykers, because the Strykers are playing a critical role. When I was in Poland, I actually visited a Stryker unit and talked with their commanders, and that is why, at their request, we are up-gunning them with 30-millimeter cannons and we are looking at increased survivability with the hulls.

At the same time, we are, as you know, doing these heel-to-toe rotations with an armored brigade combat team going back and forth every 9 months. That has given us two things. That has allowed the Army to practice deploying again, and that is a critical skill in a theatre like that, where you can actually move your unit from continental United States to Europe and all the critical tasks it takes to get into your optimal battle position. So we are rotating, and we are rotating very highly trained units that are coming right out of the National Training Center and are prepared. So that gives you a great deterrence capability as well.

And so that is just kind of a sampling of things that we are doing to make sure that we maintain the deterrence initiative.

We are also working very closely with the Poles to make sure that they improve their training areas, both in the northeast and the northwest of the country, that will allow us to maintain our readiness. We see them participating in exercises with U.S. Forces in Germany. In fact, when I was there in Germany, I visited the joint maneuver readiness center at Hohenfels, Germany. And it was a Polish brigade going through training there with U.S. units, Italian units, U.K. units, et cetera, reporting up to it, exercising in a multinational endeavor against a likely threat they might see from the east.

So all these things, whether it is the training, whether it is the equipment upgrades, et cetera, all adding, I think, building to the deterrence that we need in order to keep any—

Mr. RUPPERSBERGER. I know there is some unrest with some of our key allies in that European area around the Russia area. Are we doing anything to make them feel better and working with them and helping them?

Secretary ESPER. We are training extensively with all of our NATO allies in Europe. But, like I said, when I was there, I saw everybody from the Germans, Poles, Estonians. We had these enhanced force packages running all the way from Estonia, Latvia, Lithuania, down to the U.S. presence in Poland, and a lot of assurance happening there.

And as I mentioned earlier as well, I was in Ukraine where we have a presence there, training Ukrainians. So I think we are doing a lot on that front. I don't know if the chief may have something to add on this issue.

General MILLEY. Thanks, Congressman. In terms of assurance, I think the United States does a lot for NATO and our allies, from a military perspective. And from the Army's perspective, we are. We are doing a tremendous amount of training. We have got units cycling through a wide variety of exercises that General Scaparrotti has planned, and now General Cavoli. So that is important.

We are increasing our APS-2 stocks in this budget from what is currently about a brigade set to a division set. That is important. We are continuing, as the Secretary said, the rotation of the armored brigade combat team, the combat aviation brigade, and other enablers, in addition to the forces that are already there.

I would mention manning that is both in this budget and the previous budgets. Congress has been very generous, and the Secretary of Defense and President have allowed us to modestly increase our end strength. That is important because the readiness of the force rests upon good people and having enough people in the right ranks and skill set. So increasing our readiness by the end strength in the Regular Army, increase of another 4,000 this year. We increased last year, et cetera. That will be important in improving the readiness.

So in the here and now, our readiness glide path bottomed out 2½ years ago. That is when it hit bottom. And because of the great effort of Congress, OSD, and many, many others, we are on an upward trajectory. It is unambiguous, an upward trajectory of readiness. It needs continued sustained funding, and that will take care of the here and now.

And simultaneously with that, we want to pivot and ensure tomorrow's readiness, modernization. And that is what those six priorities are. That is what Futures Command, CFTs are all about. Again, maintaining and sustaining and continue to improve the foxhole of today's readiness, while at the same time building tomorrow's readiness.

Mr. RUPPERSBERGER. Thank you.

Ms. GRANGER. Judge Carter.

Mr. CARTER. Thank you, Madam Chairman.

WIN-T

I hate to go back to a sore subject, but on WIN-T, we have invested \$6 billion in that, and it is what I would have classified as a failed early project. It didn't do well at all. It flunked in multiple categories relative to what the chief just talked about.

Now, as you go forward in this area, I hope you are impressing upon those that are going forward that we don't need any more \$6 billion early fails in communications. And let's let the Army lead the whole Federal Government because, in reality, the environment of the Federal Government is slow and tedious when it comes to technology.

And I agree with the chief. We have got to get up to light speed, because I used to try cases where we would have intellectual prop-

erty cases, and we would settle them because by the time we got to court, it had changed. That was 6 months of time.

IRON DOME

Shifting over to another thing that is out there, we are looking to build a range-based, ground-based defense system for projectile threats. The Israelis, we have given them and assisted them with \$1.5 billion to help them in building Iron Dome. There are those in the Pentagon that have talked about we should look at off-the-shelf projects of things that are out there. Iron Dome is battle tested, seems to work. Is there any reason why we are not looking at Iron Dome rather than spending \$51 million on a slow research and development process that maybe will put us online by 2022 to have this system, when the Israelis are using it today and I am sure they would be glad to sell us one? A question.

General MILLEY. We are looking at Iron Dome. I think what you are talking about—I think, Congressman, what you are talking about is IFPC, which is inside the budget. And you are looking at a ballistic missile defense capability, but not just ballistic missiles, short-range missiles in addition to aircraft.

Iron Dome, however, is designed against a different threat than IFPC. So we are working with and we are examining multiple alternatives. It has to be mobile. Iron Dome is not mobile right now, tactically mobile. But we haven't ruled out or ruled in anything in the area that you are specifically talking about right now. And all options are still on the table for that, and we are exploring all those options.

So Iron Dome is not in or out. We are looking at it. We are looking at IFPC. We are looking at the requirements. And we want to make sure, with industry, that we get what we need as fast as we can get it, because that particular area, you know, shoot, move, communicate, protect, so it is in our priorities there as the fourth priority. That has to do with fixed wing enemy aircraft, rotary wing enemy aircraft, ballistic missile defense, short-range missile attack. And our Army needs to fill that gap and do so quickly. So we are looking at all the options.

Mr. CARTER. Thank you.

Ms. GRANGER. Chairman Frelinghuysen.

ENGAGING WITH SOLDIERS AND FAMILIES

Mr. FRELINGHUYSEN. I would just like to note for the record that General Milley went to a very fine New Jersey institution for graduate studies. And we note, of course, Secretary Esper is a graduate of West Point.

This is sort of an odd question, but you are both graduates of the 1980s, and I was going to ask this of Heather Wilson and her colleague, the Air Force chief. How do you get input from the younger generation, you being obviously in positions of major responsibility? Obviously, no soldier wants to go into combat with the Army chief one-on-one. How do you actually take input and ideas from soldiers? How do you make sure that the chain of command knows sort of the reality of social networking and the things that sort of tie their incredible missions to the real world we are in?

Secretary ESPER. Yes, sir. I have two sources, first of which are my three kids, who range between 18 and 25. And knowing them and their friends, I got a good feel for what is happening at that age group, and that is roughly the age group from which we recruit. And it gives you good insight into what they do on social media, you know, how they interact socially, the skills they take to any role.

But more importantly, though, is every time I have traveled—and I have been in the job now 3½ months. I have traveled more than half that time, mostly overseas. I spend almost every lunch and sometimes a breakfast sitting down with a group of soldiers: E-2s, E-3s, E-4s.

Mr. FRELINGHUYSEN. We do that too and actually, in reality, sometimes the bigger brass likes to hone in and sit right next to them.

Secretary ESPER. Oh, no, sir. I keep them far away. And so we just have a very candid discussion about what is on their mind. And I typically come back with notes as soon as I get back that I divvy out to the staff. And it is any range of issue, whether pay issues, or if you are in the Guard, it is how soon or how late you were notified on an issue. It could be what does the next Army PT test look like? So I get a full range of questions out there with regard.

I have also been privileged to have my wife join me on these trips, and she meets with their wives, the spouses, the husbands, on these trips as well. And so I have, I guess, a third source of input there as well with regard to what is happening with regard to the schools, the daycare facilities, the clinics, et cetera, et cetera. So I try and draw from multiple sources as I head out on the road.

Mr. FRELINGHUYSEN. It is interesting, and this is not to drive the point home, the number of people that have a Fitbit, and then we get a report in The New York Times that maybe in some forward operating base somebody is lifting weights or they are doing something, and we identify where the hell they are, to the very aggressive, you know, enemies that are in that COM. It is a concern, and you are assuring us that there is an opportunity for input.

General MILLEY. Very similar in many ways. You know, we call it battlefield circulation or going around and engaging with soldiers and families and civilians around the Army. Do that all the time. Constantly on the road doing it. Been doing it for 40 years. So you get a lot of feedback that way.

In addition to that, though, formally, we do a lot of surveys, we do a lot of scientifically based analyses of various people's opinions.

Thirdly, we run a thing called a Captain Solarium, where I go out, we assemble a representative group of captains. It is run by Fort Leavenworth annually, and they go out and they do a whole seminar the last couple weeks. And then I go out and meet with them, and they give me back briefs on a wide variety of topics that we think are of interest to them.

The sergeant major is important in this regard too. We have, I personally think—and I have known a lot of sergeant majors and I love them and respect them all, but I personally think Dan Daly is one of the finest noncommissioned officers the Army has ever produced, and I think he is the best sergeant major in the Army

the Army has ever had. This is a man who has massive amounts of energy. He has a natural connective tissue sort of with the younger generation and the troops out there, and he gets out there. So I talk to him frequently, get a lot of unvarnished sort of opinions.

The other thing too that is key for both the Secretary and I and anybody operating at these levels is to remain open-minded, accept bad news, don't go ballistic if it happens to be bad news at a moment in time, but remain open-minded and fresh to new ideas.

This is a different generation. It is a remarkably talented generation of young people that are out there in our military. They communicate in different ways. Staying active on Facebook and Twitter, we get all kinds of ideas and feedback from those lanes as well. But I think being open to fresh new ideas.

We know in the world of science, the most brilliant mathematicians, they were most brilliant in their twenties. Einstein and many, many others, the passing of Stephen Hawking, they did some of their most brilliant work in physics and mathematics early in their life. And that is true, I think, of the military or any other area that requires innovation.

The innovation is with the youth, and that is important, that we at the top who work with Congress on the resources and the budget, we remain open-minded to fresh new ideas to solve age-old problems.

Mr. FRELINGHUYSEN. Thank you both.

Thank you, Madam Chairman.

Ms. GRANGER. Mr. Visclosky.

REMARKS OF MR. VISCLOSEKY

Mr. VISCLOSEKY. Thank you very much.

You have already addressed the issue with Chairman Frelinghuysen, so I don't need a response. I just feel compelled to emphasize again—and I appreciate your positive response—that the additional moneys the Department is going to receive in 2018 are significant. It is Congress' fault that we have shaved 5 months off of your year, but the fact is the increase the Department is going to have is greater than the total spending of five different subcommittees on this committee. So I appreciate the care.

Second thing that the chairman brought up about younger people, and one of my faults on this subcommittee is I do not travel enough, I do not visit enough bases, do not talk to enough enlisted people and appreciate the efforts you have gone to. I still remember, and it was very moving, we cleared out all the adults, talked to the children at the school at Fort Campbell. And it was moving. After about 15 minutes, then you realize you actually want to listen to them. And so I appreciate that.

I would suggest, and don't need a response, trust you are also with the women enlisted, clearing all the men out of the room and having a conversation with them as well. So, again, appreciate your service.

And thank you very much, Madam Chair.

CLOSING REMARKS OF CHAIRMAN GRANGER

Ms. GRANGER. Thank you.

I have just one last thing. Along with that significant amount of money goes a significant amount of confidence in the abilities of the U.S. Army. We never forget that.

Also, I had a wonderful conversation yesterday in my office. And I want to tell you one of the things that will always stay with me, and I wish I had said this at the beginning because it is for the whole subcommittee. You are very clear about what 16 years of war did to our Army, and that is something that we need to always keep in mind. So you are catching up in a different way than others that we work with.

Also, the SFAB program is a fascinating program. Be sure and keep us up to speed on that, because I see that it has great possibilities.

Thank you both for all your service, and we are adjourned. I think I was supposed to say something about that. Hold on.

That concludes today's hearing. The subcommittee is adjourned.

[CLERK'S NOTE.—Questions submitted by Mr. Rogers and the answers thereto follow:]

ARMY EFFORTS TO DETER RUSSIAN AGGRESSION IN EUROPE THROUGH THE EUROPEAN DETERRENCE INITIATIVE (EDI)

Question. The Army should continue to prioritize its EDI efforts to promote stability in Europe. Can you please describe how the Army's FY2019 EDI requests assist us in deterring Russian aggression in Europe?

Answer. The FY2019 European Defense Initiative (EDI) provides the necessary resources for the U.S. to demonstrate its combat power in Europe, improves interoperability with NATO allies, integrates the Total Army, and allows for the rehearsal of relevant war plans. The Army continues to collect and develop requirements for Europe in coordination with U.S. Army Europe (USAREUR) and has submitted proposed enhancements in OSD's FY19–23 Program Budget Review for improvements with Short Range Air Defense (SHORAD) Battalions (FY20), Combat Service Support Brigade Headquarters (FY19), and Corps Headquarters (FY TBD). Additionally, EDI enables the Army's efforts to build partner capacity for newer NATO members and increases the capability of USAREUR through the provision of more than 1,000 man-years of mobilized Reserve Component Soldiers (10 USC 12304b authority).

There have been significant changes in Europe over the past three years as a result of EDI investment. The Army is using this money to fund the full time rotation of an Armored Brigade Combat Team (ABCT) with enablers, a Division Mission Command Element (MCE), combat aviation assets to augment theater aviation providing a full Combat Aviation Brigade capability, and fulfill our responsibilities as the framework for NATO's Enhanced Forward Presence (eFP) Battle Group in Poland. This funding is also being used to enhance and modernize prepositioned equipment, including ABCTs, critical air defense launchers, and long range fires artillery. When combined with the rotational ABCT, the 2 x ABCTs in the European Set of Army Prepositioned Stocks, provide USAREUR the armored division capability necessary to deter Russian aggression in Europe.

Question. One of U.S. EUCOM Commander General Scaparrotti's biggest EDI-related priorities is increasing C4ISR capability. Though the other services contribute as well, can you please discuss the ISR-related Army EDI investments?

Answer.

Question. The debate between rotational units and permanently-based units in Europe continues. While cost is obviously a factor, can you both please discuss your thoughts on this issue?

Answer. Rotating forces from the U.S. to Europe versus forward stationing these forces allows the Army to build capability in two ways. First, it provides greater flexibility to shift forces to meet the greatest need. Under the current National De-

fense Strategy, the Secretary of Defense requires an increasingly flexible force that can be employed proactively, while deterring aggression in multiple theaters. Rotational forces enable the Army to dynamically surge forces wherever the threat emerges and provide proactive, scalable options. Second, it increases our institutional agility by exercising the systems involved in the mobilization and deployment process. While forward stationing increases assurance to our allies, the institutional agility that the Army demonstrates by rotating units builds combat credible deterrence and offers strategic flexibility.

When deciding whether to forward station or rotate units, the Army carefully measures cost factors and operational impacts. For example, transportation and operational costs are significant for rotational units while soldier travel, family housing, schools, and cost-of-living allowances are considerable cost factors for forward-stationed units, an impact magnified by expensive land, facilities, and construction costs. While the Army's analysis has often supported rotating major force elements over forward stationing, the Army has sought forward stationing in specific situations. Forces are considered for forward stationing if there is an enduring requirement and a limited pool of available forces with that specific capability. Additionally, units must be stationed in areas that allow them to build and maintain their readiness and provide the flexibility necessary for global employment. In this case, forward stationing allows the Army to free up units for global assignment rather than rotating to Europe.

NATIONAL GUARD STATE PARTNERSHIP PROGRAM

Question. The National Guard State Partnership Program continues to provide great value in U.S. efforts to build partner military capacity with allied countries. Can you please discuss the role that the National Guard State Partnership program provides to our country's national security?

Answer. The State Partnership Program (SPP) is a DoD security cooperation tool used by the geographic combatant commanders to advance their security cooperation goals and support national security interests in 80 countries, covering all six geographic combatant commands around the globe. This is accomplished by conducting over 1,000 SPP events each year. These events leverage two distinct advantages the National Guard offers: the ability to foster enduring relationships due to the connection of many Guardsmen to their respective states for the lengths of their careers and the ability to leverage the civilian skill sets of our citizen-Soldiers and Airmen. Moreover, while SPP partner nations are paired with one state or territory, they have access to all 54 and their respective National Guard capabilities, a feature which affords the United States a better understanding of partner nation capabilities. No other program can offer these advantages to the DoD or the United States.

Question. For FY17 and FY18, Congress has added additional funding for SPP—about \$8 million per year. If Congress did so again for FY19, can you please discuss the value this would provide?

Answer. The State Partnership Program (SPP) received \$8M in Congressional Adds in FY17 and FY18. However, for FY17 and FY18, four total new partnerships were added to SPP, and for FY19 several geographic combatant command countries have been nominated for new partnerships. Any additional money in FY19 will be used to address the continued growth of the program in both the number of SPP engagements per year and the number of new partnerships.

Question. The Army may not be conducting the most efficient process for the procurement of its Soldier Borne System nano-UAV program.

On 19 January 2017 the Army Requirements Oversight Council validate a requirement for the Soldier Borne Sensor program and recommended a multi-year minimum procurement of 2423 systems while approving a program cost of approximately \$56 million. Based on information provided by the Department of the Army to the Subcommittee on 15 August 2017, the Army plans to do a one-year acquisition (Tranche 1) followed by a multi-year procurement of SBS.

Given that the Army's initial procurement plan includes a one-year acquisition, has the Army re-baselined this program? And if so, please provide the committee with the total projected program cost to achieve equivalent volumes.

Answer. Yes, the Army is updating the Acquisition Program Baseline for the Soldier Borne Sensor (SBS).

On 19 January 2017, the Vice Chief of Staff of the Army (VCSA) approved the SBS Capability Production Document (CPD), which specified the procurement of a total of 7,175 SBS systems over a ten year period from Fiscal Year (FY) 2018–2028, for a total program cost of \$141.5M.

Concurrently, the VCSA approved the procurement and fielding of the first tranche of 2,423 SBS systems by FY2021 at a total cost of \$47M. Currently, the

Army estimates that it will cost \$48.5M to procure and field the first tranche of 2,423 systems based on actual price quotes received in response to the FY2018 Defense Logistics Agency Request for Quotes. The estimated unit cost per SBS is \$15,923.

Question. The FY18 Army budget documents project acquisition of 200 systems at approximately \$10,260 per unit cost. The FY19 budget documents project acquisition of 1,084 systems at \$15,923 per unit. Please explain the rationale for significantly different per unit costs with a higher volume.

Answer. The FY2018 P-40 exhibit for the Soldier Borne Sensors was based on initial market research from FY17 that identified a unit cost of \$10,260 for a maximum possible quantity of 200 systems.

When Defense Logistics Agency (DLA) submitted the Request for Quotes (RFQs) for FY2018, the Army learned that the unit costs had increased from the initial market survey information from FY17.

In FY2018, the Army shifted its contracting strategy from a Lowest Price Technically Acceptable (LPTA) to a Best Value competition (with performance as the most important criteria). That, coupled with DoD's discovery of vulnerabilities in the Small Unmanned Aircraft Systems (SUAS) supply chain (which eliminated some of the lower cost vendors), drove the cost increase seen in the industry response to the FY2018 DLA RFQ.

The FY2019 budget documents incorporate the additional information received from industry's responses to the DLA RFQ. The Army estimates that FY2019 funding (\$21.68M) will procure approximately 1,084 systems at a unit cost of \$15,923. However, pending the outcome of the full and open, best value competition scheduled for a third quarter FY2019, we anticipate that competition could drive down the prices.

[CLERK'S NOTE.—End of questions submitted by Mr. Rogers. Questions submitted by Mr. Calvert and the answers thereto follow.]

TRAINING

Question. The FY19 budget request funds additional rotations at the Combat Training Centers (CTCs) and plans the introduction of Synthetic training at all locations starting in late FY20 or FY21. Given the technology challenges to achieve accurate simulation of small arms weapons and augmented reality to deliver a virtual fighting enemy, it could take several years to achieve the full vision of Synthetic Training Environment.

What is the Army planning to do in the meanwhile to rapidly increase the quality, availability, and utilization of live instrumented training at Home Stations and Deployed Forces to build readiness before reaching the CTCs?

Answer. The Synthetic Training Environment (STE) Cross Functional Team (CFT) has identified many promising technologies that are already demonstrating the ability to accelerate the timeline to deliver capability to the force. For example, the Squad and Soldier Virtual Training is very close to being realized and the Army plans to expand delivery of the first increment of this capability as early as FY19. This capability has already proved very valuable by U.S. Army Europe to enhance small arms marksmanship skills, as well as train small unit (Squad/Team) collective maneuver.

The maneuver combat training centers have set the precedent and standard for the use of instrumentation to provide objective data on unit performance during force-on-force maneuver training. Based on that precedent, the Army has fielded instrumentation systems to enable force-on-force training at home stations with common components and capabilities. They use Instrumentable-Multiple Integrated Laser Engagement System (I-MILES) coupled with player units to track Soldiers and vehicles. Systems can monitor voice and digital communications and record live audio and video of the training event. This data is consolidated through a computerized Tactical Analysis Facility, where the unit's performance can be assessed and feedback provided via After-Action Reviews.

The Army Home Station Instrumentation Training System (HITS) is designed to enhance training by instrumenting force-on-force live training exercises for battalion level and below. Thirteen HITS suites have been fielded to Active Army unit locations and two suites have been allocated to U.S. Army Reserve locations.

To support Army National Guard (ARNG) training, the ARNG fielded FlexTrain, a rapidly deployable, global positioning system (GPS)-based instrumentation system that interfaces with Army MILES. FlexTrain supports live force-on-force training and live fire training at the brigade level and below through the ARNG's eXportable

Combat Training Capability (XCTC) program. The XCTC is a programmed home station, commander-driven event that cycles all 27 ARNG Brigade Combat Teams (BCT) through scheduled training. ARNG BCTs receive external evaluations from First Army and Regular Army Division partners at echelons from platoon to brigade.

To support units deployed or stationed in Europe, the Army fielded the Deployable Instrumentation System Europe (DISE) which is a Soldier, vehicle and building GPS and radio tracking system combined with an exercise control cell and can be located with the supported unit within training areas. The DISE system is located at Grafenwoehr Training Area, Germany and is deployed to locations across Europe to support unit collective training with Multi-National partners.

To support units stationed or deployed in the Pacific, the Army fielded Joint Pacific Multinational Readiness Capability Instrumentation System (JPMRC-IS). The JPMRC-IS system is an enhanced HITS capability located at Schofield Barracks, HI and deployed to locations across the Pacific to support unit collective training.

The Army recognizes the benefit of synthetic training environment and will look to leverage and improve the capabilities discussed.

Question. The Army's emphasis is on Training & Readiness across the total training continuum from individual training to large unit collective training, at home station, CTC and while deployed. "Ready for Combat Training" must be a continuous cycle that avoids readiness degradation following training events.

Has the U.S. Army conducted a holistic capability needs assessment to evaluate existing training capabilities that are linked to requirements across the training continuum that inform training gaps and address the sustainable readiness model?

What was the conclusion and what are the key enablers to accelerate learning, increase throughput, improve learning retention, and provide end-to-end assessment to alleviate the constraints on training that exist today and improve overall training effectiveness?

How do resource informed requirements (Programs of Record) fit into the current OTA informed methodology between Milestone A and Milestone B? Part 2 of this question—As it pertains to training & readiness, it seems that there would need to be an increase of funding to sustain the existing Programs of Record while developing and introducing new or improved alternatives. Does PB 19 account for funding existing programs in parallel with the OTA efforts?

Answer. The Army recently conducted a holistic capability needs assessment that identified critical gaps in training capabilities required to allow the Army to successfully execute cross domain operations in accordance with the Army Operating Concept. U.S. Army Training and Doctrine Command (TRADOC) completed an Enhancing Realistic Training Capabilities Based Assessment, as well as a New Generation Warfare Study focused on a near-peer threat which identified further gaps in the Army's ability to generate and sustain training readiness. The Army also supports the Department of Defense (DoD) Close Combat Lethality initiative which identified further training readiness gaps at the small unit and collective training level.

These assessments identified training gaps captured in the Army Collective Training Environment (ACTE) Initial Capabilities Document (ICD) approved by the Vice Chief of Staff of the Army (VCSA) on 8 March 2018. The ACTE ICD lays the foundation for the Synthetic Training Environment (STE) and the Soldier and Squad Virtual Collective Trainer (SSVT) as potential solutions and identified other science and technology initiatives needed to close training readiness gaps in our ability to replicate the operational environment for multi-domain operations in the strategic environment for 2020 and beyond.

The Army currently has capabilities being developed under the Other Transaction Authority (OTA). These are the Army Training Information System (ATIS), which is a defense business system program of record, and the Synthetic Training Environment (STE), which is currently being developed through a Cross Functional Team (CFT) approach. Both ATIS and STE are resourced with Research, Development, Test, and Evaluation (RDTE) funds to develop a materiel solution through prototyping. The current PORs that both ATIS and STE replace do require sustainment while ATIS and STE are under development; however, the Army is assuming an acceptable level of risk by reducing these legacy program improvements as the means of resourcing ATIS and STE.

HOME-STATION TRAINING

Question. The Army continues to build on a major initiative with the Non-System Training Device (NSTD) program to introduce realistic and effective training devices into the individual and unit training setting. These devices bring into play many aspects of the combat environment. This effort includes the acquisition of training

capabilities that support force-on-force training, force-on-target training, engagement simulation, and classroom instruction to allow soldiers, leaders, and units to train tasks and missions that would be unsafe or too resource intensive to conduct with actual weapons, weapons systems, and ammunitions or if done in the actual environment. The Army procures a variety of NSTD items such as the Home Station Instrumentation Training System (HITS). In fact, General Milley recently validated the need and importance for Home-station training.

“While combat training centers are invaluable and remain important venues for validating home-station training, Milley said synthetic training environments at home-station can provide a wider variety of training scenarios than Combat Training Centers can, and can do so with multiple repetitions at reduced cost.

—General Mark A. Milley before the Association of the U.S. Army (January 17, 2018)

With increased investment in the home station training environment can the Army accelerate expansion, upgrades and enhancements to your force-on-force training systems to provide more realistic training at home station?

Readiness has been identified as a priority. Would the Army find increased funding for home station training capabilities to modernize instrumentation and simulation be useful in building readiness across the total force?

Answer. The Army’s requirements for home station instrumentation and simulations are contained in the Army’s budget request for FY2019.

Increased investment in the home station training capabilities and science and technology initiatives, as identified in the Army Collective Training Environment (ACTE) Initial Capabilities Document (ICD), would provide solutions to improve the ability to replicate the operational environment in order to enhance realistic collective training and conduct combined arms operations in support of multi-domain operations. In particular, increased investment would enable Army to accelerate readiness through training across all domains in a contested complex environment that includes cyber, electronic warfare, space, chemical, biological, radiological and nuclear (CBRN) and dense urban environments. The Army Synthetic Training Environment (STE) and the Soldier and Squad Virtual Training (SSVT) will provide capabilities critical to upgrade and enhance the force-on-force training systems to provide more realistic training at home station. The STE CFT focus is primarily on enhancing the virtual force-on-force training capability while providing limited upgrades to live instrumented training at home station. Opportunities to accelerate live force-on-force capabilities are available and can be integrated into our current capabilities development methodology.

YAKIMA TRAINING CENTER

Question. The Army FY18 UFR requested additional funding for a second brigade of upgunned Stryker’s to increase lethality. The FY18 NDAA provided the authorization.

How does the FY19 President’s Budget request prioritize Stryker lethality?

Answer. The Chief of Staff of the Army (CSA) recently completed an assessment of Stryker program priorities and directed that all six remaining Flat Bottom Hull Stryker Brigade Combat Teams convert to the Double V-Hull Al configuration, which prioritizes mobility and protection over lethality. The Army will make a decision in early 2019 on Stryker lethality materiel solutions based on the results of training and evaluation of the 30mm Stryker vehicles and CROWS-Javelin systems being fielded to the 2CR in Germany beginning in FY 2018.

[CLERK’S NOTE.—End of questions submitted by Mr. Calvert. Questions submitted by Mr. Aderholt and the answers thereto follow:]

TACTICAL COMMUNICATIONS NETWORK SOLUTIONS

Question. My question has to do with Tactical Communications Network solutions. I am thinking specifically of systems which could support a Brigade Combat Team operating across GPS-denied environments, including subterranean environments. One solution would be to spend hundreds of millions of dollars developing such a system. However, I understand there are existing, commercial technologies, some of which are currently used by the FBI and U.S. Special Forces. This may require an independent written assessment, but I am wondering if you could provide this Committee in a few weeks some feedback on the possibility of testing existing, commercial systems to determine their possible, broader use for Brigade Combat Teams?

Answer. The Army's Network Modernization strategy is focused on employing commercial solutions as well as those systems already in use by other services, agencies, and special operations forces (SOF) to meet Army communication requirements in a congested or contested environment. As part of this strategy, we will leverage the Network Cross Functional Team rapid prototyping, experimentation and demonstration efforts. The Army plans experimentation in Infantry, Stryker, Armor, and Security Force Assistance Brigade formations to assess suitability, security, and scalability of systems to determine their possible, broader use in a variety of tactical environments. The Army plans to evaluate a vast array of technologies to include: Mobile Adhoc Networks (MANET) incorporating advanced multi-input, multi-output (MIMO) solutions for operations in dense urban terrain and subterranean environments.

RDT&E FUNDING

Question. Given the Administration's requested budgets of \$169 Billion and \$182 Billion for FY18 and FY19, as well as the Administration's focus on modernization, I would think that we would have seen a more significant investment in the RDT&E account for FY19. Will the requested level of funding in FY19 be able to address all of the efforts as described in the Army's Modernization Strategy? Additionally, what percentage or dollar amount of the FY19 RDT&E Budget Request is allocated to create the new Modernization Command?

Answer. No, because the Fiscal Year 2019 (FY19) request was completed only a few weeks after the Cross Functional Team (CFT) charters and scopes of work were approved. While the Army was able to quickly realign some of the FY19 request to meet the Army's Six Modernization Priorities, there is still work to be done. As the Army continues to refine requirements under the Modernization Strategy, we look forward to working with Congress to realign any necessary resources.

In regard to your second question, and for the same reason outlined above, there are no Research, Development, Test and Evaluation monies in the FY19 budget request specifically aligned for the Army Futures Command.

HIGH ENERGY LASERS

Question. A recent article suggested that the Army could have an objective solution to the SHORAD capability gap within the next 5 years. Can you discuss the progress that has been made with regards to high energy lasers? What are the timelines for IOC and what are the limiting factors in providing this capability to the warfighters earlier than the current timelines?

Answer. There are currently two efforts ongoing with regard to High Energy Lasers (HEL). The Army is developing a pre-prototype 100 kilowatt-class laser system on a Family of Medium Tactical Vehicles (FMTV) to meet the Indirect Fire Protection Capability Increment 2-Intercept (IFPC Inc. 2-1) program of record requirements to defeat rockets, artillery and mortar (RAM) threats at fixed and semi fixed site. This effort, the High Energy Laser Tactical Vehicle Demonstrator (HEL TVD) effort began in FY2016 is scheduled to culminate in FY2022 with a Technology Readiness Level 6 (TRL6) demonstration against a RAM target set. In 2017, Lockheed Martin built a 60 kilowatt-spectrally combined fiber laser which has been integrated into the High Energy Laser Test Truck in preparation for a 50 kilowatt-class demonstration against RAM and UAS threats in late FY2018. This risk reduction demonstration will provide key knowledge points for HEL TVD.

In FY2018, the Army began a 6.4 Research, Development, Test, and Evaluation (RDT&E) Technology Maturation Initiative (TMI) project to demonstrate a Multi-Mission High Energy Laser (MMHEL) using current HEL sub-system technology. Through the MMHEL project, the Army will integrate and conduct an FY2021 demonstration of a prototype 50 kilowatt-class HEL weapon system integrated on a Stryker platform that is able to maneuver with operational forces and counter Maneuver Short Range Air Defense (M-SHORAD) threats such as UAS, RAM as well as Rotary and Fixed-Wing aircraft. In addition to the air defense capability, the MMHEL will provide the Brigade Combat Team organic intelligence, surveillance and reconnaissance as well as precision targeting capabilities. The MMHEL operational demonstration (TRL 7) will inform requirements and reduce risk for M-SHORAD.

Limiting factors are industrial base to mass produce laser and beam control sub-system components and a full understanding of the laser vulnerability modules for M-SHORAD threats. Army S&T continues collecting, investigating, and developing laser vulnerability modules for those targets.

[CLERK'S NOTE.—End of questions submitted by Mr. Aderholt.]

Public Witness Statements

(191)



PKD FOUNDATION
Polycystic Kidney Disease

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Kansas City, MO 64131

April 17, 2018

Submitted by the Polycystic Kidney Disease (PKD) Foundation
To the House Appropriations Committee, Subcommittee on Defense
Fiscal Year 2019 Request
Subject: Other Department of Defense Programs Defense Health Program

Autosomal dominant polycystic kidney disease (ADPKD or PKD) is a genetic disease affecting hundreds of thousands of Americans. It causes cysts to grow uncontrolled in the kidneys and can lead to kidney failure. Today, there is no treatment and no cure for PKD. The only measures available to PKD patients are dialysis or kidney transplant – neither of which treat the root cause or other symptoms caused by PKD. In the civilian sector, dialysis can cost from \$50,000 to \$90,000 per year. A kidney transplant could cost hundreds of thousands of dollars during the life of the recipient.

It is estimated that about 500-1000 people, or about 600,000 individuals, are affected by PKD in the United States today. Current and former members of the US military and their families are equally as susceptible to PKD as the general population. Because of the lack of treatment and the significant impact this disease has on the patient and their entire family, basic science and clinical research are critical. PKD is a complex disease and science can only move as fast as we allow it. More funding for research will bring us closer to a treatment, and one day a cure, for PKD.

PKD is characterized by the proliferation and growth of fluid-filled cysts that progressively destroy renal function, with approximately half of PKD patients entering end-stage renal disease (ESRD) by the time they reach their 50's. Although renal failure typically does not occur until later in life, cyst formation begins early, even before birth (*in utero*). Some symptoms occur earlier in life; in particular, approximately 60 percent of affected individuals develop high blood pressure (hypertension) prior to noticeable declines in renal function. Overall, 90 percent of individuals affected by PKD will develop hypertension. This means that PKD is also a significant source of cardiovascular abnormalities.

Given the high frequency of disease, the early age of the onset of symptoms, the critical organ systems that are affected, and the general loss of quality of life, PKD is a significant risk to active military service members and their families. In addition, the devastating effects of renal failure have a severe impact on the veteran population, with PKD accounting for about 8 percent of all cases of ESRD. As such, additional research efforts to understand and counteract the progression of PKD will improve the health and well-being of military service members, veterans, and their families. The ability to change the clinical course of PKD with novel therapies would significantly benefit individuals throughout the military in the same meaningful way that it would benefit the general population.

The Department of Defense's Congressionally Directed Medical Research Programs (CDMRP) through its Peer-Reviewed Medical Research Program (PRMRP) is one key source of this essential funding for PKD research. In the past, PKD has been included as a topic area to benefit from this program. PKD researchers have received more than \$24 million in PRMRP funds since FY06.

Two particularly important PRMRP-funded projects were PKD clinical trials. Both of the trials are currently ongoing and using already FDA-approved drugs to test for efficacy in PKD; metformin (a type 2 diabetes drug) and statins (cholesterol drugs) both have potential use to slow the progression of PKD and are in human trials now due to PRMRP funding. These critical trials would not have been possible without this funding.

The amount of funding that PRMRP has awarded to PKD research through this program since FY06 is small compared to the cost of training and maintaining several thousand military personnel. The two clinical trials mentioned above are specifically designed to test inexpensive and generic drugs to determine their potential for slowing the progression of PKD. The ultimate goal of this (and all PKD research) is to develop a therapy that would slow or stop the progression of the disease to the point that kidney failure does not occur and PKD patients can remain active service members and civilians throughout their lives, free of the constraints of dialysis or transplant.

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The PKD Foundation has been focused on funding PKD research since its inception in 1982. To date, we have given out almost \$50 million, making us the largest private funder of PKD research in the world. We continue to push forward, but we cannot do it alone. We look to Congress to continue the CDMRP/PRMRP partnership with us by supporting PKD research so that every single service member and American can realize our vision that one day no one will suffer the full effects of PKD. Please help us #EndPKD

Requests

1. Provide \$20 million to create and fund a Polycystic Kidney Disease Research Program (PKDRP) within the CDMRP. With this new program, the PKDRP will be able to focus on issues regarding detection and treatment of PKD for Service Members, Veterans, their families, and the American public.
2. Reinstate polycystic kidney disease as a topic area in the PRMRP for FY 19 funding so the PKD research community can continue to obtain funding to bring us closer to treatments.

The PKD Foundation urges the Subcommittee to give these items every possible consideration.

Defense Subcommittee

Witness Disclosure Form

Clause 2(g) of rule XI of the Rules of the House of Representatives requires non-governmental witnesses to disclose to the Committee the following information. A non-governmental witness is any witness appearing on behalf of himself/herself or on behalf of an organization other than a federal agency, or a state, local or tribal government.

Your Name, Business Address, and Telephone Number:

Alexis Denny
PKD Foundation
1001 E 101st Terrace
Suite 220
Kansas City, MO 64131
816.268.8481

1. Are you appearing on behalf of yourself or a non-governmental organization? Please list organization(s) you are representing.

Yes - PKD Foundation

2. Have you or any organization you are representing received any Federal grants or contracts (including any subgrants or subcontracts) since October 1, 2008?

Yes No

3. If your response to question #2 is "Yes", please list the amount and source (by agency and program) of each grant or contract, and indicate whether the recipient of such grant or contract was you or the organization(s) you are representing.

Signature: Alexis Denny

Date: 4/20/18

Public Witness Testimony**Submitted to the House Appropriations Subcommittee on Defense****By Kim Bischoff, Executive Director****The Neurofibromatosis Network**

Thank you for the opportunity to submit testimony to the Subcommittee on the importance of continued funding for the Department of Defense's Peer-reviewed Neurofibromatosis (NF) Research Program (NFRP). NF is a terrible genetic disorder closely linked to many common diseases widespread among the American population. The highly successful Neurofibromatosis Research Program has shown tangible results and direct military application with broad implications for the general population.

On behalf of the Neurofibromatosis (NF) Network, a national organization of NF advocacy groups, I speak on behalf of the 120,000 Americans who suffer from NF as well as approximately 175 million Americans who suffer from diseases and conditions linked to NF such as cancer, brain tumors, heart disease, memory loss, bone abnormalities, deafness, blindness, and psychosocial disabilities, such as autism and learning disabilities. Thanks in large part to this Subcommittee's strong support, scientists have made enormous progress since the discovery of the NF1 gene in 1990 resulting in clinical trials now being undertaken by the NFRP.

In Fiscal Year 2019, we are requesting **\$15 million to continue the Army's highly successful Neurofibromatosis Research Program (NFRP)**. The NFRP is now conducting clinical trials at nation-wide clinical trials centers created by NFRP funding. These clinical trials involve drugs that have already succeeded in eliminating tumors in humans and rescuing learning deficits in mice. Administrators of the Army program have stated that the number of high-quality scientific applications justify a much larger program.

What is Neurofibromatosis (NF)?

NF is an unpredictable genetic disorder of the nervous system that affects almost every organ system in the body. There are three types of NF: NF1, which is more common, NF2, which initially involves tumors causing deafness and balance problems, and Schwannomatosis, the hallmark of which is severe pain. NF causes tumors to grow along nerves including in the skin, just below the skin, and in the brain and spinal cord. NF is the most common neurological disorder caused by a single gene and affects more people than Cystic Fibrosis, hereditary Muscular Dystrophy, Huntington's disease and Tay Sachs combined. It strikes worldwide, without regard to gender, race or ethnicity. Approximately 50 percent of new NF cases result from a spontaneous mutation in an individual's genes and 50 percent are inherited.

NF can cause a myriad of devastating clinical problems including nerve and brain tumors; disfiguring skin growths; inability to heal after bone fracture, which may ultimately require amputation; psychosocial disabilities, including autism and learning disabilities; unmanageable chronic pain; deafness; blindness; cardiovascular defects; vascular disease; and paralysis. NF gene mutations are also important 'drivers' of cancers in the lungs, liver, brain and breast.

NF's Connection to the Military

Neurofibromatosis (NF) has become a clinical ‘model’ for advancing medical research. The genetic information learned from NF holds the key to understanding a number of health issues that benefit the war fighter, as well as the general population, including cancer, bone fracture and repair, vascular disease, wound healing and nerve regeneration, behavior and psychosocial issues, and pain.

The Neurofibromatosis Research Program (NFRP) is providing critical research that directly benefits the War Fighter including:

Bone Repair - At least a quarter of children with NF1 have abnormal bone growth in any part of the skeleton. In the legs, the long bones are weak, prone to fracture and unable to heal properly; this can require amputation at a young age. Adults with NF1 also have low bone mineral density, placing them at risk of skeletal weakness and injury. The NFRP is a strong supporter of NF1 bone defects research and as a result this field has made significant progress in the past few years. Bone fractures sustained by the war fighter and how to repair them is of interest to the military. Research studies will identify new information about understanding bone biology and repair, and will pave the way to new strategies to enhancing bone health and facilitating repair.

Pain Management - Severe and unmanageable pain is seen in all forms of NF, particularly in schwannomatosis, and significantly impacts quality of life. NF research has shown similarities between NF pain and phantom limb pain. NFRP funding has been critical in supporting this. Chronic pain, and how to treat it effectively, is one of the most poorly understood areas of medicine, but has very high relevance to those in the military recovering from service-related injuries. NF Research in this area could help identify new ways to target pain effectively with the right drugs or therapies.

Vascular Disease and Wound Healing - NF1 elevates the risk of vascular disease including aneurysm, stroke and vessel occlusive disease. This can cause premature death, particularly in younger patients. In addition, NF1 seems to make small blood vessels around wounds less able to heal. This research will help develop markers for early detection of vascular changes that can predict those at risk of potential forthcoming cardiovascular events as well as developing treatments for this and to increase wound healing capacity which is of great relevance to the warfighter.

Psychosocial and Cognitive Disabilities - In the last couple of years, NFRP research has revealed common threads between NF1 learning disabilities, autism and other related disabilities. Research being done within the NF Clinical Trials Consortium, NFRP created clinical centers, has led to important findings and expanded research in this area. This research contributes to our broadening understanding of how brain signaling can impact on behavior and psychosocial difficulties. Members of the military returning from service can suffer from psychological trauma and it is not easy to understand how this can be effectively treated. As we learn more from the NF population about psychosocial function, we will be able to shed light on this area for the benefit of the military.

Nerve Tumors and Repair - Nerves are the most common location for tumor development among patients with NF1, NF2, and schwannomatosis. Tumor growth alone, or treatments for the same, commonly cause nerve injury and associated deficits. Identifying mechanisms to

improve nerve repair would benefit patients with NF, as well as advance the science needed to better treat nerve injury common in warfighters.

The Army's Contribution to NF Research

While other federal agencies support medical research, the Department of Defense (DOD) fills a special role by providing peer-reviewed funding for innovative and rewarding medical research through the Congressionally Directed Medical Research Program (CDMRP). CDMRP research grants are awarded to researchers in every state in the country through a competitive two-tier review process. These well-executed and efficient programs, including the NFRP, demonstrate the government's responsible stewardship of taxpayer dollars.

Recognizing NF's importance to both the military and to the general population, Congress has given the Army's NF Research Program strong bipartisan support. From FY96 through FY18 funding for the NFRP has amounted to \$332.85 million, in addition to the original \$8 million appropriated in FY92. In addition, between FY96 and FY16, 365 awards have been granted to researchers across the country.

The Army program funds innovative, groundbreaking research which would not otherwise have been pursued, and has produced major advances in NF research, including conducting clinical trials in a nation-wide clinical trials infrastructure created by NFRP funding, development of advanced animal models, and preclinical therapeutic experimentation. Because of the enormous advances that have been made as a result of the Army's NF Research Program, research in NF has truly become one of the great success stories in the current revolution in molecular genetics. In addition, the program has brought new researchers into the field of NF. However, despite this progress, Army officials administering the program have indicated that they could easily fund more applications if funding were available because of the high quality of the research applications received.

In order to ensure maximum efficiency, the Army collaborates closely with other federal agencies that are involved in NF research, such as the National Institutes of Health (NIH). Senior program staff from the National Institute of Neurological Disorders and Stroke (NINDS), for example, sit on the Army's NF Research Program Integration Panel which sets the long-term vision and funding strategies for the program. This assures the highest scientific standard for research funding, efficiency and coordination while avoiding duplication or overlapping of research efforts.

Thanks in large part to this Subcommittee's support, scientists have made enormous progress since the discovery of the NF1 gene. Major advances in just the past few years have ushered in an exciting era of clinical and translational research in NF with broad implications for the general population. These recent advances have included:

- Phase II and Phase III clinical trials involving new drug therapies for both cancer, hearing tumors, vision tumors, bone graft and cognitive disorders;
- Establishment of the Neurofibromatosis Clinical Trial Consortium which includes an operation center and 24 clinical sites. Allows for partnerships with well-established NF Centers, pooling expertise and resources, quicker turn arounds of scientific reviews and

regulatory approvals, leveraged work with pharmaceutical companies all towards the common goal of new treatments and a cure for Neurofibromatosis;

- Successful elimination of tumors in NF1 and NF2 mice with the same drug;
- Development of advanced mouse models showing human symptoms;
- Rescue of learning deficits in mice with an already existing well known drug;
- Determination of the biochemical, molecular function of the NF genes and gene products;
- Connection of NF to numerous diseases because of NF's impact on many body functions.

Fiscal Year 2019 Request

The Army's highly successful NF Research Program has shown tangible results and direct military application with broad implications for the general population. The program has now advanced to the translational and clinical research stages, which are the most promising, yet the most expensive direction that NF research has taken. Therefore, continued funding is needed to continue to build on the successes of this program, and to fund this promising research thereby continuing the enormous return on the taxpayers' investment.

We respectfully request that you include \$15 million in the Fiscal Year 2019 Department of Defense Appropriations bill for the Peer-reviewed Neurofibromatosis Research Program. With this subcommittee's continued support, we will prevail. Thank you for your support.

[Insert Subcommittee Name Here]

Witness Disclosure Form

Clause 2(g) of rule XI of the Rules of the House of Representatives requires non-governmental witnesses to disclose to the Committee the following information. A non-governmental witness is any witness appearing on behalf of himself/herself or on behalf of an organization other than a federal agency, or a state, local or tribal government.

Your Name, Business Address, and Telephone Number: <i>Kimberly Bischoff 213 S. Wheaton Ave. Wheaton, IL 60187</i>	
1. Are you appearing on behalf of yourself or a non-governmental organization? Please list organization(s) you are representing. <i>Neurofibromatosis Network</i>	
2. Have you or any organization you are representing received any Federal grants or contracts (including any subgrants or subcontracts) since October 1, 2012 related to the agencies or programs funded by the Subcommittee? Yes <input type="radio"/> No <input checked="" type="radio"/>	
3. Have you or any organization you are representing received any contracts or payments originating with a foreign government since October 1, 2012 related to the agencies or programs funded by the Subcommittee? Yes <input type="radio"/> No <input checked="" type="radio"/>	
4. If your response to question #2 and/or #3 is "Yes", please list the amount and source (by agency and program) of each Federal grant (or subgrant thereof) or contract (or subcontract thereof), and/or the amount and country of origin of any payment or contract originating with a foreign government. Please also indicate whether the recipient was you or the organization(s) you are representing.	

Signature: *Kimberly Bischoff* Date: *4/11/18*

Testimony of The Michael J. Fox Foundation for Parkinson's Research
United States House of Representatives
Fiscal Year 2019 Appropriations
Subcommittee on Defense, Congressionally Directed Medical Research Programs

The Michael J. Fox Foundation for Parkinson's Research (MJFF) appreciates the opportunity to comment on Fiscal Year (FY) 2019 appropriations for the U.S. Department of Defense (DoD). Our comments focus on the importance of federal investments in biomedical research through the Congressionally Directed Medical Research Programs (CDMRP). **MJFF supports an appropriation of at least \$20 million to the CDMRP Parkinson's Research Program (PRP).** In recent years, PRP funding has significantly decreased (from \$25 million in FY 2010 to \$16 million in FY 2018). Reinstating funding at previous budget levels will ensure scientific progress of importance to our nation's service members can continue.

As the world's largest nonprofit funder of Parkinson's disease (PD) research, MJFF is dedicated to accelerating a cure for Parkinson's and developing improved therapies for those living with the disease today. In funding more than \$800 million in PD research to date, the Foundation has fundamentally altered the trajectory of progress toward a cure. However, MJFF investments are a complement to, rather than a substitute for, federally funded research. With critically needed Parkinson's breakthroughs on the horizon, robust and reliable federal funding is imperative to drive progress. Currently, there is no therapy to slow, stop or reverse the progression of PD. Additionally, existing treatments are limited in their abilities to address patients' medical needs and remain effective over time.

Parkinson's is a chronic, progressive neurological disorder affecting nearly 1 million Americans. It is the second most common neurodegenerative disease after Alzheimer's. Approximately 10 percent of Americans with Parkinson's disease are military veterans. Parkinson's results in an estimated annual economic burden of at least \$26 billion. Investing in research on the front end to develop innovative therapies and cures can lower back-end costs. New treatments would relieve the burden on Medicare, Medicaid and the Department of Veteran Affairs.

PRP: Efforts to Prevent and Stop Parkinson's Progression

Started in 1997, the CDMRP's Parkinson's Research Program aims to identify and understand risk factors associated with PD (such as chemical exposures, psychological stress and traumatic brain injury) in order to prevent or delay the onset of symptoms, as well as advance the development of new treatments. The program has granted more than 250 awards to investigate a variety of mechanisms of and factors influencing disease progression. Understanding possible environmental causes of Parkinson's will help the military reduce service member exposures through protective equipment or other mitigations, and allow civilians take action to reduce their risk.

The Parkinson's Research Program has supported a range of studies on environmental chemical exposures to identify hazards in the line of duty. Service members can be exposed to chemicals through many means, including during deployments and through contact with military materials such as jet fuel and permethrin-impregnated uniforms. DoD-funded studies have found strong associations between organochlorine pesticides and neurodegenerative disease. In addition, fundamental advances in neurobiology made possible by DoD funding are providing new

understanding of these diseases and helping scientists identify biological markers to evaluate the role of chemical exposures, head injury and chronic psychological stress in neurodegenerative disease risk.

CDMRP: Unique Research with Reach Beyond the Military

The research portfolio supported by the Congressionally Directed Medical Research Programs fuels scientific discovery by propelling exploration of revolutionary ideas and concepts with the potential to support and treat members of the military and the greater national population. The CDMRP funds highly innovative projects — for which support is typically limited or unavailable — from research teams at top universities and medical centers.

It is important to note, Department of Defense programs neither duplicate nor supplant National Institutes of Health (NIH) research programs, but rather enhance those efforts. NIH-funded basic research serves as a foundation for groundbreaking, disorder-targeted research at the DoD. NIH and DoD program officers meet to ensure collaboration and prevent duplication.

The well-executed and efficient programs within the defense health research programs demonstrate responsible government stewardship of taxpayer dollars and benefit current and former military service members, the general patient population and our nation's economy. DoD's biomedical research funding has led to many significant breakthroughs and achievements, contributing to national security and the health and welfare of U.S. Armed Forces personnel and their dependents.

Please continue to invest in Americans' health and well-being by **allocating \$20 million dollars for the PRP in FY 2019 and supporting CDMRP programs generally.**

Defense Appropriations Committee

Witness Disclosure Form

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Your Name, Business Address, and Telephone Number:

Brittany Meyer
1121 Vermont Road NW #1120
Washington, DC 20005

1. Are you appearing on behalf of yourself or a non-governmental organization? Please list organization(s) you are representing.

The Michael J. Fox Foundation for Parkinson's Research

2. Have you or any organization you are representing received any Federal grants or contracts (including any subgrants or subcontracts) since October 1, 2008?

Yes No

3. If your response to question #2 is "Yes", please list the amount and source (by agency and program) of each grant or contract, and indicate whether the recipient of such grant or contract was you or the organization(s) you are representing.

Signature:

Brittany Meyer



Date: 04/13/2018

**Testimony of RADM Jonathan White, USN (Ret.)
President and CEO of the Consortium for Ocean Leadership
Before the House Appropriations Committee's Subcommittee on Defense
Regarding Naval Science and Technology Capabilities
13 April 2018**

On behalf of the Consortium for Ocean Leadership (COL), I appreciate the opportunity to share our funding priorities for the Fiscal Year (FY) 2019 Defense Appropriations Act. COL represents the nation's leading ocean science, technology, and education institutions, with the mission to shape the future of ocean science. Ocean science strengthens our national security, supports a safe and efficient marine transportation system, underpins our economy, and furthers understanding of complex ocean and coastal processes important to our everyday lives – today and tomorrow.

Aligning with like-minded security science organizations and coalitions¹, we respectfully request the subcommittee provide the Department of Defense (DOD) no less than \$2.4 billion for the Defense basic research program elements, \$14.5 billion for the Defense Science & Technology program, and to support the administration's request for the Defense Advanced Research Projects Agency (DARPA). To ensure our nation can maintain maritime superiority in an increasingly unstable world, COL respectfully requests the subcommittee oppose the cuts in funding proposed in the president's FY 2019 budget request and provide the Navy with no less than the science and technology funding levels appropriated in the FY 2018 omnibus spending bill, which were \$622 million for basic research (6.1), \$994 million for applied research (6.2), and \$817 million for advanced technology development (6.3).

DOD leaders have testified that competitor nation states are meeting and beating the U.S. in innovative and strategic capabilities;² DOD has conceded to the attrition of our competitive military advantage in air, land, sea, space, and cyberspace;³ and the Navy acknowledges the U.S. competitive advantage in ocean sciences and understanding and exploiting the ocean environment has eroded.⁴ Action must be taken – not only to address today's threats but also to preserve our ability to efficiently and effectively respond to tomorrow's threats. DOD's science and technology program does just this, balancing basic research to respond to future threats through emerging science and technologies with applied research to enable successful transition of scientific and technological capabilities to maintain our warfighting advantage over potential adversaries. To maintain our nation's national security, we also *must* prioritize science and technology investments in concert with our national security and national defense strategies.

It is paramount that the U.S. Navy maintains its strategic advantage in the undersea domain against strategic competitors (e.g., China, Russia) and rogue regimes (e.g., Iran, North Korea) who threaten our maritime security and superiority. Ensuring robust and sustained funding for Navy science and technology programs and partnerships (which represent a small fraction of the overall Navy budget) is key to ensuring the culture of innovation and initiative that DOD has prioritized (internally as well as with its non-federal research partners) is mirrored through the Navy. Federal investment is required to meet the endstate goals of the U.S. Navy's Task Force Ocean:

¹ <https://www.amacad.org/pdfs/InnovationAmericanImperativeCalltoAction.pdf>

² [https://armedservices.house.gov/hearings/review-and-assessment-fiscal year-2019-budget-request-department-defense](https://armedservices.house.gov/hearings/review-and-assessment-fiscal-year-2019-budget-request-department-defense)

³ National Security Strategy: <https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905-2.pdf> and National Defense Strategy <https://www.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf>

⁴ USN Task Force Ocean Problem Statement: https://community.apan.org/cfs-file/_key/docpreview-s/00-00-01-62-71/TFO-Newsletter_2D00_25-Apr-2017.pdf

- Navy-relevant ocean science infrastructure in the U.S. remains measurably ahead of our competitors
- The U.S. Navy's capability and capacity to understand and exploit the ocean environment remain measurably ahead of our competitors
- The U.S. Navy's capability and capacity to exploit the full range of science and technology development in the U.S. advance through increased permeability between the Navy and government, academia, and the private sector

To achieve enhanced performance in the undersea battlespace, testing and demonstration of science and technology concepts is required, including studies and new approaches to real-time characterizations conducted by integrated programs that may include seagoing oceanography, acoustics, signal processing, unmanned systems, and data analytics. The president's FY 2019 budget request for Navy's basic research funding is \$25 million below the FY 2018 omnibus level, with the Navy's University Research Initiative falling 17 percent. Navy's applied research funding sees a \$103 million hit in the request, with significant decreases to Power Projection Applied Research (-38 percent), Ocean Warfighting Environment Applied Research (-43 percent), and Undersea Warfare Applied Research (-5 percent). Technology development fares no better with its \$66 million difference between the request and the FY 2018 omnibus. Reductions such as these could mean critical research projects do not receive funding, effectively limiting the Navy's ability to "exploit the full range of science and technology development" occurring through partnerships with academia. Additional to losses in critical research areas like observations and modelling; unmanned vehicles; power generation; propulsion hydromechanics; bioinspired autonomous and surveillance systems; environmental quality; and casualty care, management, and prevention, the Navy may be forced to reduce its science, technology, engineering, and math (STEM) activities. Whether decreasing support for the Young Investigator Program or sponsoring fewer graduate fellowships at historically black colleges and universities (HBCU) and Hispanic serving institutions (HSI), this is a major loss to the human capital and tactical workforce development identified as a key issue by Navy's Task Force Ocean.

Ocean Science – Vital to the Nation's Security

Ocean science and technology have provided our nation with a knowledge advantage against myriad maritime threats. Basic ocean research forms the critical foundation to ensure continuity of our ocean knowledge advantage, which in turn generates warfare advantage and deters aggression. However, as noted, the Navy's competitive advantage over key military competitors in understanding and exploiting the ocean environment has diminished and can only be re-established through investments in science and technology research across all ocean agencies. Asian and European ocean education and research enterprises have, in many cases, matched or exceeded those in our nation. Admiral James Watkins, former Chief of Naval Operations, often remarked that oceanography was a key determinant in the U.S. Cold War "victory," due to the knowledge advantage provided to our forward deployed maritime forces, especially our submarines. We are firmly convinced that ocean science and technology today can and must provide us with the same knowledge advantage against the maritime threats we face today and tomorrow.

The academic research community has enjoyed a long and productive partnership with the U.S. Navy in helping to ensure maritime military readiness, domain awareness, and warfighting advantage. This success has its foundation in sustained investment in science and technology programs implemented through the 6.1, 6.2, and 6.3 programs. Investments in science and technology now are crucial to ensuring future capabilities, which take time and sustained funding to nurture through the research and development process and to integrate into the operational

battlespace. A good example of this is the continued acceleration of autonomous undersea vehicles (AUV) and other ground-breaking undersea technology by the Navy and DOD. The impact of the ocean environment on these systems is even more pronounced than it was for the manned and tethered systems of the past. Acoustic advantage; endurance and energy consumption; autonomy; and effective command, control, and communications for AUVs (to include artificial intelligence capabilities) are heavily influenced by ocean conditions. These must be measured, modeled, and accurately predicted to ensure undersea warfare advantage is maintained against a global undersea threat that is ever-growing in complexity and proliferation.

Given the critical importance of ocean knowledge in both the warfighting arena and in threat awareness, the ocean science community greatly appreciates the subcommittee's backing of the Navy's science and technology enterprise, including collaborations and partnerships. COL strongly supports inclusion of adequate funds in the 6.2 account to implement Task Force Ocean at-sea research priorities (Ocean Warfighting Environment Applied Research). Primary goals include increasing connection between ocean enterprise and Navy's challenges; improving transition of research into operation for warfighter efficiency; capitalizing existing science and technology strengths and supporting new technology development; and training tomorrow's workforce with the proper skillset to meet future needs. Naval forces also require precise knowledge of how the environment will impact operations to gain tactical advantage against adversaries who are intimately familiar with their home environments. The request for increased funds will allow the Navy to contract with University-National Oceanographic Laboratory System (UNOLS) ships for needed research sea time and seagoing technical capabilities to progress at-sea research.

Ocean research and marine technology development provide the critical foundation to ensure continuity of our undersea knowledge superiority that generates warfare advantage. Simply put, our undersea forces must be able to win every "away game," and we therefore must be able to exploit the ocean environment to ensure "home field advantage" at those "away games."

Navigating Threats from Changing Ocean Conditions – Critical Sensing and Observing

Monitoring, understanding, and predicting ocean changes enables us to plan strategically for impacts to global and regional stability and to plan effectively to counter threats that are catalyzed by decaying stability. Stability, comprised of food, water, energy, and economic security, must be understood, predicted, and mitigated through increased ocean knowledge. The Navy and DOD have a distinguished history of fostering the science and technology that have been responsible for U.S. military success and superiority under, on, and above the sea. There is growing concern that this superiority is being challenged by a significant increase in investment by our rivals, while funding support for science and technology within DOD and the Navy has languished. This is particularly apparent in the proposed reduction in the Navy 6.2 and 6.3 funding included in the president's FY 2019 budget request, which would result in an approximately 10-20 percent decrease in research and technology development resources.

With the ocean providing 20 percent of the animal protein in the human diet⁵ and 24 percent of global land degrading (25 percent rangeland, 20 percent cropland),⁶ it is understandable that illegal, unreported, and unregulated (IUU) fishing and desertification are not only food security issues but ultimately ones of national security. Changes in ocean conditions directly associated with access in the Arctic lead to expanded navigation and commerce in the region (e.g., shipping,

⁵ http://www.education.noaa.gov/Ocean_and_Coasts/

⁶ http://www.un.org/en/events/desertification_decade/value.shtml

fishing, oil and gas exploration, bioprospecting, mining) and could result in disputes amongst nations or accidents requiring search and rescue or other response.

Whether considering ocean conditions to better understand drought forecasts or to model changes in fish distributions, data and information from the sea strengthen the Navy's awareness of conflict catalysts. However, these data and information must be gathered. Ocean observation platforms and sensor technology advancement allow for real-time characterization of ocean conditions as well as necessary data to assess trends. The basic and applied research lines, robust partnerships and collaborations with ocean science and technology institutions, and in-house surveying capabilities all support the increase of ocean knowledge for our nation's security advantage.

Long-term Commitment to People, Platforms, and Partnerships – Human Capital and Tactical Workforce

It is hard to overemphasize the significant advantages that have resulted from Navy support for basic research, including highly trained people, cutting-edge technology, and innovative ideas. The advantage and benefits that have accrued to DOD and the Navy cannot be attributed solely to the amount of investment – equally important is the Office of Naval Research's culture that understood the importance of providing *sustained* support for technology development and the cultivation of researchers (internally and among its academic partners), including early career and established scientists. The cultivation of people and technology in support of national security priorities is well beyond the mission and role of other federal agencies supporting ocean science, such as the National Science Foundation and the National Oceanic and Atmospheric Administration. For example, the U.S. Navy's competitive advantage in undersea warfare research relies on the ability to execute unique data collection systems and sea-going expertise. The backbone for these programs is comprised of partnering scientists, expert engineers, and technicians with decades of experience in executing research at sea.

It is also important to recognize the critical role science and technology funding plays in the development of new technology (e.g., sensors, platforms, models, data analytics) that are essential to helping the Navy meet its mission requirements. Much of the oceanographic equipment in use today, for defense and nondefense research, observations, and modeling, has resulted from Navy investment in its development, as well as its integration to defense and non-defense at-sea platforms and in research labs through the Defense University Research Instrumentation Program. Unfortunately, the level of investment in technology development has seriously declined in recent years, with greater focus being placed on the transition of applied technology into operations. The negative impacts of this shift in emphasis and support has been realized as the flow of new technologies and their application to Navy mission requirements slows, just as the increased investments by rivals begin to bear fruit. Task Force Ocean specifically targets ocean-related technology development through and with the Navy, academia, and the private sector.

Additional to the technology shortfalls, there is a human capital issue. Forty-seven percent of American geoscientists in the private sector and 43 percent in the federal government are over the age of 55, making them likely to retire in the next 10 years.⁷ The Workforce Research team at the American Geosciences Institute calculated that there will be a shortfall of 135,000 geoscientists in the U.S. workforce over the next decade. Specifically Navy-focused, the Navy oceanography enterprise has lost more than half of its physicists and geophysicists and 12 percent

⁷ Distribution of Geoscientists, Fedscope, March 2015, <https://www.fedscope.opm.gov/ibmcognos/cgi-bin/cognosisapi.dll>

of its physical scientists and oceanographers in the last decade alone. In the last 20 years, the Naval Research Laboratory has lost approximately 50 percent of its acousticians and 13 percent of its oceanographers. We can ill afford to have a shortage of these workers, both military and civilian, who are vital to the national security community.

Conclusion

Ocean science and geosciences *writ large* impact every American every day. Across the nation, across science disciplines, and across the federal family, it is clear that robust and sustained federal investments in ocean and geosciences are key to addressing global and national challenges; underpinning new and growing economies while maintaining and supporting existing ones; and improving technologies that preserve lives, livelihoods, persons, and property. As the subcommittee drafts the FY 2019 spending bill, we hope you reflect on the Navy's concern with the erosion of competitive advantage in the ocean science and technology arena and the fact that the bulk of the intellectual capacity regarding the ocean resides within the academic research community. Peer-reviewed extramural research is the most efficient and effective vehicle for providing our policymakers and our commercial partners with the expertise, information, and data necessary to address the emerging challenges facing our nation.

To maintain global stability, it is critically important the nation understand the factors of conflict catalysts. To successfully navigate a changing physical, chemical, and biological ocean while maintaining geopolitical establishments, the Navy must regain their competitive advantage in knowing the ocean and coastal baseline conditions, changing conditions, forecasted conditions, vulnerabilities of undersea and coastal infrastructure, and the threatened human population. The changing climate and ocean systems are altering when and where our military may be called to duty but also *how* the military can respond. Rising sea levels affect amphibious landing opportunities and extreme weather could impact deployment, intelligence, surveillance, and reconnaissance capabilities. It is through the robust federal support of the Navy's basic and applied research, maintaining superiority in technology development and integration, and through collaborative partnerships with ocean science and technology institutions that this will happen.

Madam Chairman, Ranking Member, and members of the subcommittee, the ocean science and technology community appreciates the support the subcommittee provided for oceanographic research and technology advancement, and we hope you will continue to prioritize science investments to ensure the U.S. can maintain its superiority at sea. The ocean research community is well positioned to assist the Navy in meeting national security challenges in the maritime battlespace. We greatly appreciate your consideration of our recommendations and look forward to working with you to support science and technology innovation that underpins our military's superiority and our nation's security.

Below is a list of institutions that are represented by the Consortium for Ocean Leadership:

Alabama	Massachusetts
Dauphin Island Sea Lab	Massachusetts Institute of Technology
Alaska	University of Massachusetts, Dartmouth
Alaska Ocean Observing System	Woods Hole Oceanographic Institution
Alaska Science Center	Mississippi
Arctic Research Consortium of the United States (ARCUS)	University of Mississippi
North Pacific Research Board	University of Southern Mississippi
University of Alaska Fairbanks	New Hampshire
California	University of New Hampshire
Aquarium of the Pacific	New Jersey
Bodega Marine Laboratory	Monmouth University Urban Coast Institute
Esri	Rutgers University
Estuary & Ocean Science Center, San Francisco State University	New York
Gordon and Betty Moore Foundation	Columbia University Lamont-Doherty Earth Observatory
L-3 Communications MariPro, Inc.	IEEE Oceanic Engineering Society
Liquid Robotics, Inc.	Stony Brook University
Monterey Bay Aquarium Research Institute	North Carolina
Moss Landing Marine Laboratories	Duke University
Stanford University	East Carolina University
Teledyne RD Instruments	North Carolina State University
U.S. Naval Postgraduate School	University of North Carolina, Chapel Hill
University of California, San Diego Scripps Institution of Oceanography	University of North Carolina, Wilmington
University of California, Santa Barbara	Oregon
University of California, Santa Cruz	Oregon State University
University of Southern California	Pennsylvania
Colorado	Pennsylvania State University
Cooperative Institute for Research in Environmental Sciences (CIRES)	Rhode Island
Connecticut	University of Rhode Island
Mystic Aquarium & Institute for Research	South Carolina
Delaware	South Carolina Sea Grant Consortium
Mid-Atlantic Regional Association Coastal Ocean Observing System (MARACOOS)	University of South Carolina
University of Delaware	Tennessee
Florida	Eastman Chemical Company
Earth2Ocean	Texas
Florida Institute of Oceanography	Harte Research Institute for Gulf of Mexico Studies
Harbor Branch Oceanographic Institute of Florida Atlantic University	Shell Exploration & Production Company
Mote Marine Laboratory	Sonardyne, Inc.
Nova Southeastern University	Texas A&M University
University of Florida	University of Texas at Austin
University of Miami	Virginia
University of South Florida	College of William & Mary Virginia Institute of Marine Science
Georgia	Institute for Global Environmental Strategies (IGES)
Savannah State University	Old Dominion University
Skidaway Institute of Oceanography of the University of Georgia	Teledyne CARIS
Hawaii	U.S. Arctic Research Commission
University of Hawaii	Washington
Illinois	Sea-Bird Scientific
John G. Shedd Aquarium	University of Washington
Louisiana	Vulcan, Incorporated
ASV Global, LLC	Washington, D.C.
Louisiana State University	National Ocean Industries Association (NOIA)
Louisiana Universities Marine Consortium	Southeastern Universities Research Association (SURA)
Maine	Marine Technology Society (MTS)
Bigelow Laboratory for Ocean Sciences	Wisconsin
The IOOS Association	University of Wisconsin, Milwaukee School of Freshwater Sciences
University of Maine	Australia
Maryland	Institute for Marine and Antarctic Studies (IMAS)
Johns Hopkins University Applied Physics Lab	Bermuda
National Aquarium	Bermuda Institute of Ocean Sciences
Severn Marine Technologies, LLC	Canada
University of Maryland Center for Environmental Science	Dalhousie University
	University of Victoria Ocean Networks Canada

[Defense Subcommittee]
Witness Disclosure Form

Clause 2(g) of rule XI of the Rules of the House of Representatives requires non-governmental witnesses to disclose to the Committee the following information. A non-governmental witness is any witness appearing on behalf of himself/herself or on behalf of an organization other than a federal agency, or a state, local or tribal government.

Your Name, Business Address, and Telephone Number: RADM Jonathan W. White, USN (ret.) President and CEO Consortium for Ocean Leadership 1201 New York Ave, NW Suite 420 Washington, DC 20005 1.202.448.1250
Are you appearing on behalf of yourself or a non-governmental organization? Please list organization(s) you are representing. Consortium for Ocean Leadership
Have you or any organization you are representing received any Federal grants or contracts (including any subgrants or subcontracts) since October 1, 2008? Yes
If your response to question #2 is "Yes", please list the amount and source (by agency and program) of each grant or contract, and indicate whether the recipient of such grant or contract was you or the organization(s) you are representing. For all grants, contracts, subgrants, and subcontracts below, Consortium for Ocean Leadership is the recipient. * Indicates initial award made prior to October 1, 2008, but additional funding provided after October 1, 2008.

Prime Award Number	Agency	Program	Cumulative Funding
DE-FE0010195	Department of Energy	Hydrate-Focused Marine Program	169,216.00
DE-FE0023919	Department of Energy	Hydrate-Focused Marine Program	120,040.00
E4061695	Marine Mammal Commission	Biodiversity Workshop	138,248.15
E4062016	Marine Mammal Commission	Interagency Ocean Observation Committee	8,000.00
E4062062	Marine Mammal Commission	Population Consequences of Acoustic Disturb	1,750.00
NNX11AO32A	NASA	Enhanced Ocean Policy, Observations, Literac	1,882,058.15
NNX16AJ87A	NASA	Enhanced Ocean Policy, Observations, Literac	715,389.00
NNX09AL56G	NASA	National Ocean Sciences Bowl	200,000.00
ANT-0537228	National Science Foundation	Andrill Program	96,225.00 *
ICER-1440170	National Science Foundation	Earthcube	189,416.00
ICER-1623751	National Science Foundation	Earthcube	174,928.00
ICER-1740929	National Science Foundation	Earthcube	58,366.00
OCE-1249114	National Science Foundation	Gulf of Mexico Oil Spill and Ecosystem	13,300.00
OCE-0950477	National Science Foundation	Integrated Earth Data Applications	169,216.00
OCE-0950403	National Science Foundation	Interagency Ocean Observation Committee	311,585.00
OCE-1042742	National Science Foundation	Interagency Ocean Observation Committee	311,894.00
OCE-1151784	National Science Foundation	Interagency Ocean Observation Committee	249,997.00
OCE-1238842	National Science Foundation	Interagency Ocean Observation Committee	76,495.00
OCE-1247353	National Science Foundation	Interagency Ocean Observation Committee	448,937.00
OCE-1555588	National Science Foundation	Interagency Ocean Observation Committee	449,056.00
OCE-0352500	National Science Foundation	International Ocean Drilling Program	609,772,535.00 *
OCE-0432224	National Science Foundation	International Ocean Drilling Program	49,466,884.00 *
OCE-0939562	National Science Foundation	Linking Transformational Science, Education,	86,123.00
OCE-0939564	National Science Foundation	Linking Transformational Science, Education,	49,710.45
OCE-0813758	National Science Foundation	Marine Geoscience Leadership Symposium	177,868.00
OCE-1031668	National Science Foundation	Marine Geoscience Leadership Symposium	198,483.00
OCE-1235507	National Science Foundation	Marine Geoscience Leadership Symposium	290,784.00
ICER-1443178	National Science Foundation	Minority-Serving-Reconstruction Earth's Clim	654,576.00
OCE 0742120	National Science Foundation	National Ocean Sciences Bowl	827,731.00 *
OCE-1242501	National Science Foundation	National Ocean Sciences Bowl	152,753.00
OCE-0418967	National Science Foundation	Ocean Observatories Initiative	38,517,807.00 *
OCE-0964093	National Science Foundation	Ocean Observatories Initiative	105,930,000.00
OCE-1005697	National Science Foundation	Ocean Observatories Initiative	280,226,490.00
OCE-1026342	National Science Foundation	Ocean Observatories Initiative	279,345,487.00
EAR-1550917	National Science Foundation	Open Core Data	535,227.00
GEO-1201642	National Science Foundation	Planning Grant to Bring Cutting Edge Scientifi	38,691.00
DRL-1515856	National Science Foundation	Pop-up, Drill-down Science	1,786,784.00
DRL-1114678	National Science Foundation	Ship to Shore Science	248,217.00
OCE-0431095	National Science Foundation	U.S. Science Support Program	14,749,921.00 *
OCE-0652315	National Science Foundation	U.S. Science Support Program	42,794,315.00 *
NA10OAR4600117	NOAA	Biodiversity Workshop	138,248.15
NA09OAR4600209	NOAA	Census of Marine Life	200,000.00
NA07SEC4690001	NOAA	National Ocean Sciences Bowl	6,670,500.00 *
NA12SEC0080019	NOAA	National Ocean Sciences Bowl	834,990.00
NA14SEC0080006	NOAA	National Ocean Sciences Bowl	154,934.00
NA15SEC0080002	NOAA	National Ocean Sciences Bowl	900,000.00
NA11OAR4310213	NOAA	TPOS2020 Distributed office Project Managme	225,922.00
N00014-07-D-0829002	Office of Naval Research	National Ocean Partnership Program	4,288,060.00
N00014-13-P-5011	Office of Naval Research	National Ocean Partnership Program	22,271.00
N00014-13-1-0218	Office of Naval Research	National Ocean Sciences Bowl	230,056.00
N00014-14-1-0193	Office of Naval Research	National Ocean Sciences Bowl	230,786.00
N00014-15-1-2050	Office of Naval Research	National Ocean Sciences Bowl	249,701.60
N00014-16-1-2344	Office of Naval Research	National Ocean Sciences Bowl	324,864.00
N00014-17-1-2906	Office of Naval Research	Task Force Ocean	384,177.82
F13AP00237	US Fish and Wildlife Service	National Ocean Sciences Bowl	25,000.00
G11AP20191	US Geological Survey	Interagency Ocean Observation Committee	10,000.00

Signature:

Date: 18 April 2018



National
Multiple Sclerosis
Society

Leslie Ritter
Senior Director, Federal Government Relations
National Multiple Sclerosis Society
Email: Leslie.Ritter@nmss.org

Before the United States House of Representatives, Committee on Appropriations,
Subcommittee on Defense

Madam Chairwoman and Members of the Subcommittee, thank you for this opportunity to provide testimony on behalf of the National Multiple Sclerosis Society (Society) regarding Department of Defense (DoD) Appropriations for fiscal year 2019 and to discuss the importance of the research funded by the Multiple Sclerosis (MS) Research Program (MSRP) to those affected by MS. **As you consider priorities for FY2019, we urge the Subcommittee to provide \$12 million in discretionary spending for the MS Research Program (MSRP) within the Congressionally Directed Medical Research Programs (CDMRP).**

MS is an unpredictable, often disabling disease of the central nervous system that interrupts the flow of information within the brain, and between the brain and body. Symptoms range from numbness and tingling to blindness and paralysis. The progress, severity, and specific symptoms of MS in any one person cannot yet be predicted. Most people with MS are diagnosed between the ages of 20 and 50, and women are diagnosed at two to three times higher more often than men.

The Society works to provide solutions to the challenges of MS so that everyone affected by the disease can live their best lives. To fulfill this mission, we fund cutting edge research, drive change through advocacy, facilitate professional education, collaborate with MS organizations around the world, and provide services designed to help people affected by MS move their lives forward. We see ourselves as a fundamental partner to the U.S. government in many critical areas – particularly in the arena of MS research. In 2017, we leveraged over \$30 million Society dollars in research and work in coordination and collaboration with federal investments at the National Institutes of Health (NIH) and the MSRP to ensure that the best research is funded.

The CDMRP is a peer-reviewed program funded through the Department of Defense via the Defense Appropriations Act. Individual programs like the MSRP are funded at the direction of Congress and fill research gaps by funding high impact, high-risk and high gain projects that other research agencies- like the NIH, may not venture to fund. The CDMRPs are distinctive in that they involve active participation of people living with the program disease area. These patients and patient representatives are highly coveted roles, as they are involved in all areas of the program- from establishing the mission/vision of the program, to reviewing applications and making recommendations for funding, and evaluating the impact of the program. People living with MS value the opportunities within the MSRP as a way they can engage in the research process. The Society applauds the way MSRP structure is designed and believes that it aligns with the direction of patient centered drug development and care in the research and drug development ecosystem.

MS prevalence and military service

It has long been stated that the prevalence of MS in the United States was around 400,000 individuals. However, a recent study commissioned by the Society more than doubles that estimate and places the figure closer to one million individuals. Preliminary results of the Society's estimate were presented at the European Committee for Treatment and Research in Multiple Sclerosis Meeting in Paris, France and a copy of that poster is attached to this testimony for the Committee's reference. Publication of this figures is expected later this summer.

Extrapolating figures from the new Society estimate, we believe there are approximately 70,000 veterans in the U.S. that live with MS and each year, the Veterans Health Administration provides care to more than 20,000 veterans living with MS.

MS is considered a presumptive condition and veterans who have symptoms of MS in the military or within seven years after honorable discharge are eligible for the service-connected status. To date, approximately 12,000 U.S. veterans have a service-connected disability for MS, meaning that their MS was incurred or aggravated during their military service. An advisory committee by the Veterans Administration recommended further study into the potential link between combat service and increased risk of developing MS, but more work needs to be done to examine longer time impact for those who have served - the Vietnam War through to those who served in Operation Enduring Freedom, Iraqi Freedom and New Dawn. **To appropriately monitor this cohort of servicemen and women, the Society recommends that Congress ensure that information and data can be easily shared between the U.S. Department of Veterans Affairs and the Department of Defense. Because the demographics of the military have changed over the past several decades, it is more critical these two Agencies can share data to examine health impacts and needs by age, race, ethnicity and sex/gender.**

Research into the underlying causes of MS and improving methods of diagnosing, treating and potentially curing MS is critical to improving the lives of our military servicemen and servicewomen and all of those living with MS. As the underlying cause of MS is still unknown, MSRP funded research will help improve the lives of those currently serving in the military who can be deployed to areas and environments that may increase the risk of developing neurologic diseases like MS, during or after their service and will also help the military understand how to counter these environmental triggers to improve the readiness and deployability for future servicemen and women.

Multiple Sclerosis Research Program

The MS Research Program (MSRP) was established by Congress in 2009. Its vision is to prevent, cure, reverse, or slow the progression, and lessen the personal and societal impact of MS. Like many of the other programs within the CDMRP, the MSRP specifically encourages applications that address critical needs of the MS community and concentrate on: the biological basis of disease progression, risk factors leading to the prevention of MS, drug discovery and biomarkers for preclinical detection of MS. MSRP research has led to four patent applications and patents. To date, Congress has appropriated approximately \$49 million dollars to the MSRP, including \$6 million in the final FY2018 omnibus spending bill. From those appropriations, the MSRP has funded 82 awards, resulting in 69 research projects, 87 publications and over 2,000 citations on PubMed.

MSRP has funded studies that examine gap in MS from basic science to rehabilitation research. A particular area of interest in MS research is imaging technology, as diagnosis of MS and tracking disease progression remains challenging, both for active duty military personnel, veterans and civilians. MRI's are often used by health care providers to track disease activity. Currently, MRI findings are not accepted by the Food and Drug Administration as indicators of clinical meaningfulness in the drug development and approval process and more research is needed in the form of more long-term studies correlating brain MRI with disability progression.

Additionally, a growing body of evidence have implicated environmental, genetic factors, age, and microbial infections in the development of MS. Recent MRSP funded studies have examined alterations in the gut microbiota and suggest that these alterations influence the onset and progression of autoimmune diseases like MS. This information will be incredibly useful to people with MS, who often ask about the impact of dietary and lifestyle changes to help manage MS symptoms and reduce the occurrence of relapses.

This body of research that will improve MS diagnosis and the drug development process, by answering questions that are important to people living with MS. Further, MSRP funded research allows the healthcare system to better track disease progression and activity, allowing healthcare providers in both the military and civilian populations to better anticipate the needs of people living with MS. The clinical application of the research done at MSRP is particularly important to in the military, as it will facilitate better conversations surrounding troop readiness and the ability of an individual to deploy.

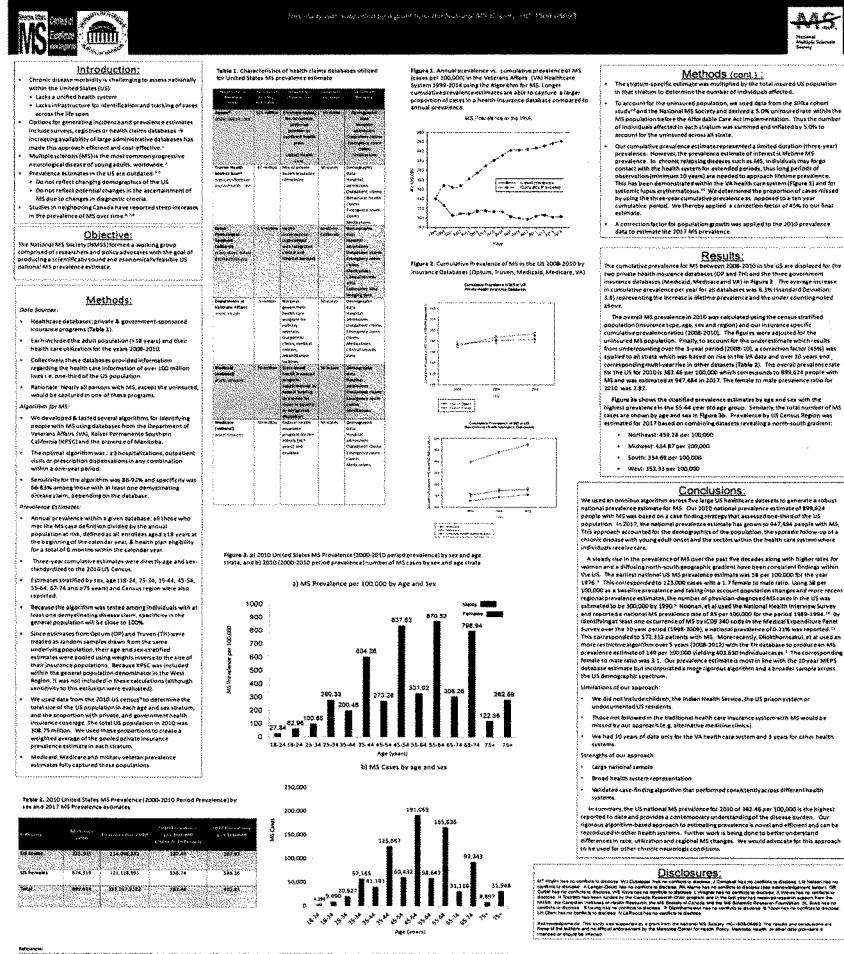
Because of the tremendous impact the MSRP has on research and development of potential therapies for MS and the increased number of veterans living with MS, **the National MS Society requests that Congress provide \$12 million in discretionary appropriations.** This funding will allow the MSRP to continue the innovative research that will improve the lives of those living with MS. Limited funding dollars mean pioneering research questions pertaining to the etiology of MS remain unfunded and this data is needed to move us closer to identifying a cure.

The Society thanks the Committee for its investment in the CDMRP, particularly the MSRP. We appreciate the opportunity to provide written testimony and our recommendations for FY2019 appropriations for the program. The MSRP is of vital importance to people living with MS and we look forward to continuing to work with the Committee to help move us closer to a world free of MS.

The Prevalence of Multiple Sclerosis in the United States: A Population-Based Healthcare Database Approach

Mitchell T. Wallen, MD, MPH¹; William J. Culpepper, PhD²; Ingvilath Campbell, PhD³; Lorraine M. Newton, PhD⁴; Arnefettta Jasper Gould, MD, PhD⁵; Ruth Ann Marin, MD, PhD⁶; Gary R. Cutter, PhD⁷; Vassilis I. Kary, PhD⁸; Leslie Kwolek, MPH⁹; Arif Wazir, BA¹⁰; Helen Trantafili, PhD¹¹; Stephen P. Barker, PhD¹²; Shih-Cheng Liou, PhD¹³; Shih-Cheng Liou, PhD¹³; Elizabeth E. Thompson, PhD¹⁴; Michael D. Hahn, PhD¹⁵; and Linda L. O'Brien, DPH¹⁶. ¹University of the United States MS Prevalence Working Group

²Georgia State University, Atlanta, GA; ³Department of Veterans Affairs, St. Louis, MO; ⁴College of Public Health, University of Louisville, Louisville, KY; ⁵Department of Internal Medicine, University of Michigan, Ann Arbor, MI; ⁶University of Minnesota, Minneapolis, MN; ⁷Department of Internal Medicine, University of Colorado, Denver, CO; ⁸Faculty of Medicine, University of Manitoba, Winnipeg, MB, Canada; ⁹University of Alberta, Edmonton, Edmonton, AB; ¹⁰Marking Consulting Corporation, Atlanta, GA; ¹¹University of British Columbia, Vancouver, BC, Canada; ¹²Mount Sinai Hospital, Toronto, ON, Canada; ¹³Alberta Multiple Sclerosis Society, New York, NY, United States



House Committee on Appropriations – Defense Subcommittee

Witness Disclosure Form

Clause 2(g) of rule XI of the Rules of the House of Representatives requires non-governmental witnesses to disclose to the Committee the following information. A non-governmental witness is any witness appearing on behalf of himself/herself or on behalf of an organization other than a federal agency, or a state, local or tribal government.

Your Name, Business Address, and Telephone Number:

Leslie Ritter
National Multiple Sclerosis Society
1100 New York Avenue, NW
Suite 440-E
Washington D.C. 20005

1. Are you appearing on behalf of yourself or a non-governmental organization? Please list organization(s) you are representing.

National Multiple Sclerosis Society

2. Have you or any organization you are representing received any Federal grants or contracts (including any subgrants or subcontracts) since October 1, 2008?

Yes No

3. If your response to question #2 is “Yes”, please list the amount and source (by agency and program) of each grant or contract, and indicate whether the recipient of such grant or contract was you or the organization(s) you are representing.

N/A

Signature: Leslie Ritter

Date: April 13, 2018

**Written Testimony Submitted for the Record to the
Senate Committee on Appropriations Subcommittee on Defense
Regarding FY 2019 Funding for Infectious Disease Research and Development
Regina Rabinovich, MD, MPH, President
On behalf of the American Society of Tropical Medicine and Hygiene**

The American Society of Tropical Medicine and Hygiene (ASTMH)—the largest international scientific organization of experts dedicated to reducing the worldwide burden of tropical infectious diseases and improving global health—appreciates the opportunity to submit written testimony to the Senate Committee on Appropriations, Subcommittee on Defense on funding to support the Department of Defense's (DoD) infectious disease research and development efforts for the protection of our U.S. military and citizens' health.

According to Lt. Gen Patricia Horoho when testifying before the Subcommittee in 2016, "historically, infectious diseases are responsible for more U.S. casualties than enemy fire." As continually demonstrated, emerging infectious diseases do not recognize borders and "deficiencies in international state preparedness to address them remain a threat. Continued progress to address these emerging threats requires ongoing commitment to funding, developing personnel with expertise in infectious diseases, and maintaining stateside and overseas laboratory infrastructure and overseas field sites for clinical studies and response to contingencies."¹

U.S. Government Action is needed for Mission Readiness

The impact of infectious diseases on the success or failure of military operations is often overlooked. Even a cursory review of U.S. and world military history demonstrates the need to keep military personnel safe from infectious diseases is critical to mission success. Although several promising new infectious disease drugs are in development at Walter Reed Army Institute of Research (WRAIR), the U.S. Naval Medical Research Center (NMRC), and U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), the U.S. government's funding level for these programs has been anemic for several years. As Congress looks to provide greater funding and support for U.S. military capabilities, we urge lawmakers to look at the historical decline in funding for DoD's medical research programs that has occurred, despite burgeoning evidence that many of our military's current drugs are rapidly approaching obsolescence.

Fortunately, a relatively small amount of increased funding for this program would restore the levels of research and development investment required to develop the drugs that will safeguard U.S. troops. In relation to the overall DoD budget, funding for infectious diseases research programs is very small. While we understand there are tough choices to make in this fiscal environment, cutting funding for these programs would deal a major blow to the military's efforts to reduce the impact of these diseases on soldiers and civilians alike, thereby undercutting both the safety of troops deployed to tropical climates and the health of civilians in those regions.

ASTMH respectfully requests that the Subcommittee expand funding for the DoD's longstanding efforts to develop new and more effective drugs, vaccines, and diagnostics designed to protect our forces from infectious diseases.

Tropical Medicine and U.S. Military Operations

The term "tropical medicine" refers to the wide-ranging clinical, research, and educational efforts of physicians, scientists, and public health professionals that focus on the diagnosis, prevention, and

¹ Prepared Statement of Lieutenant General Patricia D. Horoho, The Surgeon General, United States Army before the U.S. Senate Appropriations Committee, Subcommittee on Defense.

treatment of diseases most prevalent in regions with a tropical climate. Since many of the world's developing nations and economies are located in these areas, tropical medicine tends to focus on diseases that impact the world's most impoverished individuals. Increasingly, these diseases are also becoming more prevalent among populations fleeing civil conflict and they can pose a significant risk to U.S. military troops or travelers exploring new locations on leisure. Most tropical diseases are located in sub-Saharan Africa, parts of Asia (including the Indian subcontinent), Central and South America, and parts of the Middle East – regions with frequent U.S. military deployment. Ultimately, tropical diseases have the ability to blind, disable, disfigure, and can lead to death. They also can be a major detriment to military operations.

DoD Research Protects the U.S. Military and Civilians and Contributes to Global Health

DoD's Global Emerging Infections Surveillance and Response Systems (GEIS) protects the health of our military forces and enhances global health security by providing infectious disease surveillance, laboratory harmonization, capacity building, and scientific studies to international civil and military health networks in order to prevent, detect, and respond to emerging and priority microbial threats. During Operation United Assistance, the response to the Ebola outbreak in the fall of 2014, the DoD leveraged global health and medical countermeasure programs already in place, to support efforts in Ebola vaccine and therapeutic development, diagnostics and laboratory support, and training to ensure the safety of care providers and patients. Looking forward, DoD experts that have experience working with the Zika virus will need increased support for surveillance of affected areas. Biosurveillance and response measures for emerging pathogens must be in place prior to the next event to ensure a timely and efficient response.

Walter Reed Army Institute of Research

A large part of DoD investments in infectious disease research and development are facilitated through WRAIR. Some of WRAIR's major accomplishments include:

- Conducted clinical trials of a precursor to the RTS,S malaria vaccine, paving the way for its subsequent development for pediatric use in Africa;
- Conducted clinical trials of a *P. vivax* vaccine candidate, the first human subject challenge model to test *vivax* vaccine efficacy;
- Developed the world's only dedicated cutaneous leishmaniasis drug development program;
- First identified HIV-1 heterosexual transmission and showed efficacy of an HIV vaccine, through the Military HIV Research Program; and
- Developed new products - Japanese encephalitis and hepatitis A vaccines.²

WRAIR has advanced its work through critical public private partnerships and collaborative efforts with entities such as:

- GlaxoSmithKline and Sanofi;
- Non-profit organizations such as the Bill & Melinda Gates Foundation, Medicines for Malaria Venture, and PATH and PATH Malaria Vaccine Initiative;
- Universities such as the University of Maryland and SUNY Upstate Medical University; and,
- Other U.S. agencies including the Centers for Disease Control and Prevention (CDC), USAID, and the National Institutes of Health (NIH).

Starting in the 1980s, WRAIR worked in collaboration with GSK and later with both GSK and PATH's Malaria Vaccine Initiative to help develop the malaria vaccine candidate, RTS,S, which is expected to move into pilot implementation in parts of three African countries in late 2018. The pilots, coordinated

² WRAIR Website: <http://wrair-www.army.mil/documents/wrair%20overview.pdf>

by the World Health Organization, are intended to further assess the feasibility, safety, and impact of the vaccine in young children in sub-Saharan Africa. While the pediatric RTS,S regimen is not suitable as a vaccine for adults who have never experienced malaria during childhood, such as our military personnel, WRAIR is collaborating again with PATH and GSK to help test an alternative—and apparently more efficacious—RTS,S regimen that may have application for military purposes. This experience highlights the importance of continued research funding to support the development of safe and effective vaccines appropriate for our fighting forces.

WRAIR is headquartered in Silver Spring, Maryland, and has facilities around the globe including U.S. Army Medical Research Unit—Europe (USAMRU-E) in Heidelberg, Germany; U.S. Armed Forces Research Institute of Medical Sciences (AFRIMS) in Bangkok, Thailand; U.S. Army Medical Research Unit in Nairobi, Kenya (USAMRU-K)³. This diversity in research capacity puts WRAIR in a unique leadership position in research and development for tropical diseases—research that aids our military men and women as well as people living in disease-endemic countries.

United States Naval Medical Research Center

NMRC and its affiliated labs conduct basic and applied research in infectious diseases. NMRC is an active participant in global health security efforts and focuses on mitigating the spread of antimicrobial resistance and malaria. The Infectious Disease Directorate (IDD) of NMRC focuses on malaria, enteric diseases, and viral and rickettsial diseases. IDD conducts research on infectious diseases that are considered to be a significant threat to our deployed sailors, marines, soldiers, and airmen.

The primary objective of the Navy Malaria Program is to develop a vaccine that kills the parasite during the first few days of development in the liver, before it breaks into the blood. The program is also investigating vaccines that would target blood-stage infection to limit the severity of symptoms associated with this stage. Both of these vaccines could alleviate much of the suffering caused by this parasite in tropical areas.

The research is enhanced by IDD's close working relationship with the Navy's three overseas medical research laboratories located in Peru, Egypt, and the Pacific region. These laboratories, like those of WRAIR, afford diplomatic advancement through the close working relationships they have developed with governments and citizens of those countries. ASTMH has heard first-hand accounts of the successful diplomatic impact that both the WRAIR and NMRC overseas laboratories have on the communities where they are guests. Many of the researchers and staff who work in the laboratories are local to the area and speak highly of the role and contributions of the U.S. military laboratories.

United States Army Medical Research Institute of Infectious Disease

USAMRIID, started in 1969, has the primary mission of protecting military service men and woman from biological threats by developing vaccines, drugs, diagnostics, and information. USAMRIID's capabilities include Biosafety Level 3 and Level 4 laboratories, world-class expertise in the generation of biological aerosols for testing candidate vaccines and therapeutics, and fully accredited animal research facilities.

USAMRIID collaborates with organizations such as the CDC to rapidly characterize suspected pathogens and the World Health Organization in its emerging disease work and serves as a reference laboratory for the Department of Defense. USAMRIID's research, development, testing and evaluation efforts have resulted in the development of vaccines, currently in various stages of clinical trials, to protect against the following infectious disease threats: Plague, Ebola and Marburg hemorrhagic fevers, and Hantavirus.

³ WRAIR Website: <http://wrair-www.army.mil/WRAIRSubordinateCommands.aspx>

Case Studies - The Importance of DoD's Infectious Disease Research Efforts

Malaria - According to the World Health Organization, in 2016, there were 216 million new cases of malaria (this is about seven times the populations of Australia) and 445,000 deaths due to malaria. **For every military campaign fought in malaria-endemic regions during the 20th century, Malaria has resulted in the loss of more person-days among U.S. military personnel than bullets.** Still, Malaria continues to be a significant threat to U.S. military deployment success. The recent deployment of U.S. troops to West Africa as part of the Ebola crisis response thankfully saw no American service members contract Ebola, but five soldiers did contract malaria. While this number may seem insignificant, we must see it for what it is, a warning sign: without new antimalarials to replace existing drugs as they become ineffective to obsolete, military operations could be halted in their tracks.

Because service members deployed by the U.S. military comprise a majority of the healthy adults traveling each year to malarial regions on behalf of the U.S. government, the U.S. military has understandably taken a primary role in the development of antimalarial drugs. Nearly all of the most effective and widely used antimalarials were developed in part by U.S. military researchers, which is a remarkable accomplishment. Drugs that now continue to save civilians throughout the world were originally developed by the U.S. military to protect troops serving in tropical regions during WWII, the Korean War, and the Vietnam War.

Over time, however, the challenge has continued to evolve with the latest generation of malaria medicines increasingly facing drug-resistance. The most deadly variant of malaria parasite—*Plasmodium falciparum*—is believed by the World Health Organization to have become resistant to “nearly all antimalarials in current use.” The malaria parasite demonstrates a notorious and consistent ability to quickly develop resistance to new drugs. Malaria parasites in Southeast Asia have already shown resistance to the most recently developed anti-malarial drug, artemisinin, and the specter of truly untreatable malaria is a “real and present danger.”⁴ Developing new antimalarials as quickly as the parasite becomes resistant to our existing ones is an extraordinary challenge, and one that requires significant resources before resistance becomes widespread, especially as U.S. military operations in malaria-endemic countries of Africa and Asia increase.

In recent years the broader international community has increased its efforts to reduce the impact of malaria in the developing world, particularly by reducing childhood malaria mortality, and the U.S. military plays an important role in this broad partnership. However, military malaria researchers at NMRC and WRAIR are working practically alone in the development of drugs and vaccines designed to protect or treat healthy adults with no developed resistance to malaria – U.S. military and travelers. It is the military’s work in this area that is most critical to maintaining the health of our troops and protecting U.S. national security interests.

Zika – The Zika virus disease is spread to people primarily through the bite of an infected *Aedes* species mosquito. In 2016, the World Health Organization designated the Zika virus and its suspected complications in newborns as a public health emergency of international concern. DoD researchers at WRAIR and NMRC have been tasked with working in collaboration with the Department of Health and Human Services on Zika countermeasures. Drawing on deep experience with flaviviruses that started with research on yellow fever in the 1800s, WRAIR and collaborators brought two Zika vaccine candidates through early testing in just four months in 2016. The Defense Department also has expertise

⁴ http://csis.org/files/publication/141202_Plowe_DangerUntreatableMalaria_Web.pdf

in insect repellent and insecticide treated clothing that could prove useful to Zika efforts. The Defense Department currently has 2,748 female employees — active duty, reserve, Guard and civilian — assigned to the affected regions, with 96 percent of those serving in Puerto Rico or the U.S. Virgin Islands.⁵

Ebola - In addition to the US Army service members who were deployed to West Africa to combat Ebola virus in May 2015, scientists at the WRAIR have explored candidate vaccines, while others undertook clinical trials of vaccines from multiple sources. In 2016, WRAIR announced its Phase 2 clinical trial of regimens using two Ebola vaccine candidates, conducted at WRAIR and in Africa. This was the second Ebola vaccine clinical trial at WRAIR and the fourth in Africa conducted by WRAIR and the US Military HIV Research Program. WRAIR continues to contribute to vital Ebola research.

Dengue fever ("breakbone fever"), according to the WHO, is the most common of all mosquito-borne viral infections. About 3.9 billion people⁶ live in places where dengue infection can be transmitted by mosquitoes, and in 2016 we saw over 260 cases that were transmitted by local mosquitoes in Hawaii.⁷ There are four different viruses that can cause dengue infections. While infection from one of the four viruses will leave persons immune to that strain of the virus, it does not prevent them from contracting the other three, and subsequent infections can often be more serious. The DoD has seen about 28 cases of dengue in soldiers per year. While none of these cases resulted in the death of a soldier, hospitalization time is lengthy. As troops rebalance to the Pacific, they will deploy to areas plagued with dengue. Experts predict that infectious diseases will be the primary cause of hospitalization of U.S. military in the Asia-Pacific region. Currently, there are several research and development efforts underway within the DoD both for treatments and vaccines for dengue.

Conclusion

Ensuring the safety of our men and women deployed and in conflict requires a stable commitment to the ongoing research and continued advancement of our medical capabilities. Our medical capacity is just one of the many elements that are critical to maintaining our line of defense. Current events only strengthen the case for increasing our investments in the research and development programs that will improve our ability to prevent and control the spread of infectious diseases and rapidly respond to the growing challenge of drug resistant disease – preparing us for the foremost health security threats and better protecting the lives of our troops.

ASTMH feels strongly that increased support for the DoD programs' efforts to reduce the threat of infectious disease to our military and civilian population is warranted and we look forward to collaborating with the Subcommittee on efforts to maximize the health and safety of all military troops. A more substantial investment will not only help to protect American soldiers, but potentially save the lives of millions of individuals around the world. We thank you for your leadership and appreciate the opportunity to share our views in our testimony. Please be assured that ASTMH stands ready to serve as a resource on this and any other tropical diseases policy matter.

⁵ <http://www.militarytimes.com/story/military/benefits/health-care/2016/02/01/zika-virus-pentagon-relocate-risk-family-members/79515660/>

⁶ <http://www.who.int/mediacentre/factsheets/fs117/en/>

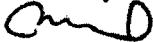
⁷ <http://health.hawaii.gov/dohd/dengue-outbreak-2015/>

[Insert Subcommittee Name Here]

Witness Disclosure Form

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Your Name, Business Address, and Telephone Number: Regina Rabinovich (617)495-1000 Harvard T.H. Chan School of Public Health 665 Huntington Avenue Building I, Room 105 Boston, Massachusetts 02115	
1. Are you appearing on behalf of yourself or a non-governmental organization? Please list organization(s) you are representing. American Society of Tropical Medicine and Hygiene	
2. Have you or any organization you are representing received any Federal grants or contracts (including any subgrants or subcontracts) since October 1, 2012 related to the agencies or programs funded by the Subcommittee? Yes <input checked="" type="radio"/> No <input type="radio"/>	
3. Have you or any organization you are representing received any contracts or payments originating with a foreign government since October 1, 2012 related to the agencies or programs funded by the Subcommittee? Yes <input checked="" type="radio"/> No <input type="radio"/>	
4. If your response to question #2 and/or #3 is "Yes", please list the amount and source (by agency and program) of each Federal grant (or subgrant thereof) or contract (or subcontract thereof), and/or the amount and country of origin of any payment or contract originating with a foreign government. Please also indicate whether the recipient was you or the organization(s) you are representing. N/A	

Signature: 

Date: 4/16/2018

WEDNESDAY, APRIL 11, 2018.

U.S. STRATEGIC COMMAND (USSTRATCOM)

WITNESS

GENERAL JOHN E. HYTEN, COMMANDER, U.S. STRATEGIC COMMAND

OPENING STATEMENT OF CHAIRMAN GRANGER

Ms. GRANGER. The subcommittee will come to order. Now that the committee has wrapped up its work on the fiscal year 2018 budget, we can turn our full attention to the President's fiscal year 2019 budget request. To that end, this morning, the subcommittee will continue its series of Defense Posture and Budget hearing. Today we will hear from General John E. Hyten, Commander of United States Strategic Command.

Before we proceed, I would like to recognize the ranking member, Mr. Visclosky, for a motion.

Mr. VISCLOSESKY. Madam Chair, I have a motion pursuant to the provisions of clause D of section IV of the rules of the committee. I move that today's hearing be held in executive session because of the classification of the material to be discussed.

Ms. GRANGER. So ordered, thank you.

United States Strategic Command employs nuclear, space, global strike, joint electronic warfare and missile defense capabilities that deter aggression, and decisively respond to—if deterrents fail. In particular, the President has forecasted the need to significantly increase spending on our nuclear capabilities as reported in the recently released 2018 Nuclear Posture Review. We thank General Hyten for joining us this morning to discuss this in further detail.

Before I recognize our witnesses, I would like to recognize our ranking member, Mr. Visclosky, for any remarks he would like to make.

Mr. VISCLOSESKY. Madam chair, I just appreciate you holding the hearing today. General, I look forward to your testimony. Thank you very much.

Ms. GRANGER. Thank you, Mr. Visclosky.

Before we begin, I would like to remind those in attendance that this is a classified hearing at the top secret level. You may not discuss the topics covered during this session beyond this room, even though you may see some addressed in the media.

Now allow me to introduce our witness, General John E. Hyten, the Commander of the United States Strategic Command. General Hyten making his first official appearance before the subcommittee. Welcome, please take 10 minutes to set the stage with some opening remarks and then we will proceed to questions, thank you.

[The written statement of General Hyten follows:]

(223)

HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON DEFENSE

STATEMENT OF
JOHN E. HYTEN
COMMANDER
UNITED STATES STRATEGIC COMMAND
BEFORE THE
HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON DEFENSE

11 APRIL 2018

HOUSE COMMITTEE ON APPROPRIATIONS
SUBCOMMITTEE ON DEFENSE

INTRODUCTION

USSTRATCOM is a global warfighting command, setting the conditions across the globe as the ultimate guarantor of national and allied security. Our forces and capabilities underpin and enable all other Joint Force operations.

USSTRATCOM is globally dispersed from the depths of the ocean, on land, in the air, across cyber, and into space, with a matching breadth of mission areas. The men and women of this command are responsible for Strategic Deterrence, Nuclear Operations, Space Operations, Joint Electromagnetic Spectrum Operations, Global Strike, Missile Defense, Analysis and Targeting, and Cyberspace Operations (until USCYBERCOM is elevated). Nearly 184,000 Soldiers, Sailors, Airmen, Marines, and Civilians support the USSTRATCOM mission, providing an umbrella of security for the United States and its allies every day. These critical capabilities are an integral part of our combat operations and enable warfighters across all domains to preserve the peace and when called upon, dominate in conflict and win.

This past year, USSTRATCOM began restructuring in alignment with our warfighting mission. We now have an air component and will soon have a maritime component. Due to the command's unique responsibilities, we are also leading doctrine with our new Joint Force Space Component Commander.

Our new Command and Control Facility is moving toward completion and will support the long-term viability and credibility of our strategic deterrent force. From this new facility, we will conduct strategic planning, warfighting operations, aid the President's nuclear response decision-making process, provide global situational awareness to the National Command Authorities and combatant commands, and, when necessary, deliver a decisive response in all domains.

The focus of this command remains to deter strategic attack on the United States and its allies. USSTRATCOM stands ready to respond to threats anywhere, anytime across the globe. We acknowledge that we cannot do this alone and must continually work towards enhancing our alliances and partnerships, in all areas.

The command's priorities remain:

- Above all else, we will provide Strategic Deterrence;
- If deterrence fails, we are prepared to deliver a Decisive Response;
- We will do this with a resilient, equipped, and trained Combat-Ready Force.

GLOBAL SECURITY ENVIRONMENT

The strategic landscape of today is increasingly uncertain, complex, and volatile. Long-term, inter-state strategic competition between nation states is reemerging, rogue regimes are taking actions that threaten regional and global stability, and violent extremist organizations are bent on destroying peace across the globe. Nevertheless, we remain committed to strategic stability with China and Russia.

China continues to challenge in the Indo-Pacific region, and our allies and partners look to the U.S. to provide balance. China's excessive maritime claims and aggressive conduct in both the South China Sea and East China Sea undermine international law and global maritime standards. Moreover, China's continued long-term military modernization of both conventional and strategic forces has implications in the Indo-Pacific region and beyond. They are aggressively modernizing their mobile nuclear forces and re-engineering their long-range ballistic missiles to carry multiple nuclear warheads. China is swiftly developing and testing a hypersonic-glide vehicle capability, a technology used to defeat ballistic missile defenses. China's pursuit of conventional global strike capabilities, offensive counterspace capabilities, and exploitation of computer networks also raises questions about its global aspirations. These developments – coupled with a lack of transparency on nuclear issues such as force disposition and size – impact regional and strategic stability.

Russia continues to pose challenges that require consistent and deliberate focus. Russia's support to forces in eastern Ukraine (which it continues to fight alongside with), occupation and purported annexation of Crimea, operations in the Middle East, and efforts to present itself as the mediator for concerns in Middle East and Asia-Pacific regions reinforce its goal of being seen as a military and diplomatic global power. Russia continues to tout advances in cyber and counterspace capabilities along with improvements in its strategic nuclear and general purpose forces. In June 2017, as part of an effort to destabilize Ukraine, the Russian military launched the most destructive and costly cyber-attack in history. The effects of this attack spread globally and included devastating damage to U.S. businesses. On March 1, President Putin announced Russia's development of six new strategic nuclear weapons systems including an intercontinental-range nuclear-powered cruise missile, an intercontinental-range underwater drone, and a maneuverable hypersonic glide vehicle. President Putin's statements are not surprising and only reinforce Russia's commitment to develop weapons designed to intimidate and coerce the U.S. and its allies. Finally, Russia's violation of the Intermediate-range Nuclear Forces (INF) Treaty with the development of the SSC-8 ground launched cruise missile remains a significant issue as delivery of the treaty-violating system continues.

North Korea remains a dangerous and unpredictable actor in the Pacific region, continuing to develop the capability to threaten the U.S. and allies with Pyongyang's evolving ballistic missile and nuclear weapons program. Kim Jong Un continues to defy international norms and resolutions through

provocative actions including their sixth nuclear test, three tests claimed to be of Intercontinental Ballistic Missiles (ICBM), and the WannaCry cyber-attack. North Korea is progressing in development of Submarine Launched Ballistic Missiles (SLBM) and Intermediate Range Ballistic Missiles. These developments highlight its commitment to diversify its missile forces and nuclear delivery options, while strengthening missile force survivability. North Korea continues efforts to expand its stockpile of weapons-grade fissile material and demonstrated its capability and willingness to conduct destructive cyber-attacks against the U.S. and its allies.

Iran continues to develop ballistic, space, and cyberspace capabilities – and we remain focused on preventing the development of the new threats in the region. While the International Atomic Energy Agency continues to verify Iran is meeting its nuclear-related Joint Comprehensive Plan of Action obligations, we must remain vigilant to any Iranian intentions that indicate it will abrogate its commitments and pursue nuclear weapons.

Ungoverned or ineffectively governed regions remain incubators for those who seek to attack the world's peaceful societies. Transregional Terrorist Organizations (TTOs) recruit and operate freely across political, social, and cyberspace boundaries. The effect of weapons of mass destruction (WMD) in the hands of TTOs could be catastrophic, which highlights the importance of our national nonproliferation and counter-WMD efforts.

THE PROBLEM

Today, our deterrent force is safe, secure, ready, and reliable, but the pace of change in the strategic environment is rapid and demands adapting how we operate in order to stay ahead of evolving threats. Failure to meet the pace of change will result in decreasing U.S. global influence, eroding cohesion among allies and partners, and reduced access to markets contributing to a decline in our prosperity and standard of living. The actions we take today assure continued American primacy in the future.

Our budget, requirement, acquisition, and testing processes are too slow. We need integrated processes that are faster and tolerate a greater acceptance of risk. The velocity of change required to resolve our operational challenges is far higher than we have attained to date. Our culture must embrace competition, seek higher performance levels, and generate urgency in achieving innovative outcomes. We must remember that our military superiority is not a birthright, but rather actively sustained by each generation.

STRATEGIC DETERRENCE

We must look at deterrence through a new lens. We are no longer defined by the bi-polar world of two superpowers that simplified our approach to deterrence. The U.S. is challenged by multiple adversaries with an expanding range of capabilities available to them. With each potential adversary comes a different set of perceptions and internal dynamics. Deterrence is more complex and a ‘one size fits all’ approach no longer applies. Operations countering one adversary have potential second and third order consequences when interpreted by other potential adversaries or our allies. This multipolar and all-domain environment requires collaboration among combatant commands, other DoD elements, allies, and partners ensuring individual efforts do not adversely affect the globally integrated approaches to each problem set. To maintain military superiority in this multipolar world, we must out-think, out-maneuver, out-partner, and out-innovate our adversaries.

The bedrock of our deterrence is our safe, secure, ready, and reliable nuclear Triad. The surest way to prevent war is to be prepared for it. While the current Triad continues to provide the backbone to our national security, we will eventually consume the last remaining margin from our investments made during the Cold War. Our modernization programs including the B-21 bomber; COLUMBIA-Class Ballistic Missile Submarine (SSBN); the Ground-Based Strategic Deterrent (GBSD); Long Range Standoff (LRSO) cruise missile; Nuclear Command, Control, and Communications (NC3); and life-extended nuclear warheads will provide – without a doubt – the nuclear deterrent capabilities our nation needs, now and well into the future.

Today, deterrence is more than just our nuclear capabilities. Deterrence requires integrated planning for all capabilities, across all domains. This enables the synchronized operation and decisive response to adversary aggression anytime, anywhere. We must make this concept operational for all domain warfighting throughout the DoD. We must normalize space and cyberspace as warfighting domains. There is no war in space, just as there is no war in cyberspace. There is only war, and war can extend into any domain. To fight wars in these domains we must develop the appropriate rules of engagement that allow for rapid response and delegate authority to the appropriate level to operate more quickly.

THE NUCLEAR POSTURE REVIEW (NPR)

The 2018 NPR guides nuclear modernization efforts and establishes U.S. deterrence policy, strategy, and posture over the coming years. This document responds to the threats of today, the burgeoning challenges of tomorrow, and underscores nuclear deterrence as a foundational element of U.S. national strength. The NPR clearly ties to USSTRATCOM’s priorities.

The guidance in the NPR is based on the strategic environment of today. As Secretary Mattis states in the document's preface, "We must look reality in the eye and see the world as it is, not as we wish it to be." Our previous efforts to deemphasize the role of nuclear weapons and reduce the size and variety of capabilities within our nuclear force did not have the reciprocal effect on other nuclear-armed states. China and Russia continue to place increased importance on nuclear weapons in their strategy and doctrine as well as expand the number and diversity of their nuclear weapons and weapon systems. We remain committed to strengthening nonproliferation and nuclear security, and we stand ready to reengage on future arms control agreements. However, a commitment to arms control and other reductions cannot be unilateral in the face of ever-increasing threats. This would harm the readiness of our nuclear deterrent, destabilize relations with potential adversaries, and reduce the confidence our allies place in our extended deterrence guarantees.

While our nuclear posture is successful in deterring our adversaries today, we require a mix of yields and improved platforms to credibly deter the threats of the near future. The NPR directs near-term fielding of a low-yield SLBM capability, and in the longer term, pursuit of a modern nuclear-armed sea-launched cruise missile (SLCM). These capabilities are necessary to enhance the flexibility and responsiveness of our nuclear forces to ensure potential adversaries understand they cannot achieve their objectives through force and there is no benefit in the use of nuclear weapons - in any scenario. Russia's increased "non-strategic nuclear weapons" and evolving doctrine of first-use in a limited conflict, give evidence of their perceived advantage at lower levels of conflict. North Korea's burgeoning nuclear capabilities demonstrate the belief that nuclear weapons provide escalation options against the U.S. and our allies in the Pacific. We must counter these dangerous perceptions with supplemental capabilities to our previously planned modernization programs. These enhanced deterrence capabilities ensure adversaries clearly understand U.S. resolve and do not miscalculate the consequences of nuclear use, raising the nuclear threshold and reducing the likelihood of nuclear weapon employment.

The NPR clearly states the role of nuclear weapons in hedging against an uncertain future. While hedging is not new, this explicit statement communicates importance of nuclear weapons in ensuring we are ready and confident to address future threats. As we have witnessed over the past decade, the security environment can change quickly. Technology is constantly evolving, and countries are seeking to use these technologies to advance their own capabilities and diminish ours. This requires an agile, ready force that is flexible enough to meet the ever-changing strategic environment, and men and women who are dedicated to the mission and postured to win.

NUCLEAR WEAPONS AND SUPPORTING INFRASTRUCTURE

To remain a credible nuclear state, the U.S. must have modern facilities and a highly skilled workforce able to maintain a credible nuclear deterrent. Across the nuclear enterprise, many of the specialized capabilities required to complete stockpile work have either atrophied or become obsolete. As a result, the U.S. is not capable of producing and/or manufacturing many of the materials and unique components in the quantities needed to sustain the stockpile over the long term.

Re-establishing the capability to produce plutonium pits at a production rate sufficient to support planned weapon sustainment activities must be a national priority. Specifically, USSTRATCOM requires no less than 80 War Reserve plutonium pits delivered to the stockpile per year by 2030 to support future deterrent requirements. Delays in developing a viable plutonium pit production capability will eventually affect our ability to meet the nation's deterrence mission requirements.

In addition to plutonium manufacturing, we require critical infrastructure investments in uranium processing, tritium processing, and lithium component production. Any shortcomings in these infrastructure projects represent a real risk to maintain force readiness and our capability to respond to either a technical issue with our stockpile or adversary advancements in their capabilities.

Modern facilities are of little value without a highly skilled workforce to conduct the necessary surveillance, sustainment, and modernization activities necessary to maintain our deterrent. National Nuclear Security Administration's (NNSA) Administrator and each of our national security laboratory directors have expressed concerns with recruiting, developing, and retaining the workforce essential to sustain our stockpile. The U.S. must have a workforce and industrial base capable of designing, engineering, and producing materials and components necessary to sustain the number of warheads and develop a flexible stockpile to hedge against future risks.

Since the Nuclear Weapons Council (NWC) approved the Long Term Stockpile Sustainment Strategy, we have made solid progress in life extending our aged weapon stockpile. The Navy's W76-1 ballistic missile warhead Life Extension Program (LEP) is over 90% complete and on track to finish in 2019. The B61-12 gravity bomb program is on schedule, on budget, and exceeding operational expectations. This weapon supports extended deterrence commitments to NATO and allows the U.S. to retire legacy gravity weapons that are approaching the end of their service lives. The Air Force and NNSA are progressing with work on the LRSO cruise missile and the associated W80-4 warhead design work to deliver that weapon system on schedule.

Our next significant weapon LEP decision pertains to future ballistic missile warhead modernization. We must determine the appropriate approach for the replacement of the Air Force's W78 ICBM warhead. The NWC's Strategic Plan is examining the feasibility of producing a warhead with

interoperable features for both Air Force and Navy ballistic missile systems. The W78 replacement study will determine the appropriate approach for developing and deploying this much needed capability.

NUCLEAR WEAPONS SECURITY

Protection of nuclear weapons, installations, and personnel is the utmost priority. We continue to work closely with the Navy and Air Force to assess nuclear security requirements and adjust our force posture, training, and equipment to maintain the high standards this mission demands. While we continue to upgrade our security capabilities, there are areas where additional investments are required to ensure the absolute denial of unauthorized access to nuclear weapons.

We need to replace the Vietnam-era UH-1N helicopters that provide security across our vast ICBM complex. I strongly support any effort that delivers a replacement helicopter with the necessary speed, armament, and carrying capacity to meet our security requirements as soon as possible.

Additionally, we need to address the escalating costs of an aging security infrastructure. Our nuclear security program relies heavily on manpower that requires appropriate investments to ensure our existing nuclear security programs are capable of protecting this Nation's most vital assets against a wide-range of technological and human threats.

The continued proliferation of sophisticated small Unmanned Aircraft Systems (sUAS) is concerning. The availability, ease of use, and capabilities of these sUAS vehicles represents a growing threat to our deterrence operations. We rapidly implemented counter-sUAS systems into our security architecture, and continue to refine our tactics, techniques, and procedures to address the developing threat. Pacing this sUAS threat will require vigilance and dedicated investment as these capabilities continue to evolve.

NUCLEAR COMMAND, CONTROL, AND COMMUNICATIONS (NC3)

Our nation's nuclear deterrent continues to be as effective as the command, control, and communications capabilities that enable it to function; therefore, we require an assured, reliable, and resilient NC3 system across the full spectrum of conflict. Maintaining a credible nuclear deterrent requires sustainment, modernization, and recapitalization of key systems and capabilities throughout the NC3 architecture that ensures effective command and control of the Nation's nuclear forces throughout today's complex multi-domain, multi-threat security environment. These capabilities must provide assured communications capabilities to the President and nuclear forces throughout all phases of hostilities and under all conditions.

USSTRATCOM requires a robust NC3 capability operating throughout the space, aerial, and terrestrial domains to both effectively execute strategic deterrence operations and provide support for the

President as an essential component of the National Leadership Command Capability. As an example of this, USSTRATCOM is working with the White House, national laboratories, and the private sector to develop decision support capabilities, setting the conditions for timely and informed senior leader decision-making under any circumstance.

In the space domain, we are transitioning from the aging Military Strategic and Tactical Relay (MILSTAR) satellite communications system to the Advanced Extremely High Frequency (AEHF) satellite communications systems. The AEHF satellite constellation system, coupled with requisite ground node and airborne platform Family of Advanced Beyond Line-of-Sight terminals (FAB-T) extends enhanced capabilities to enable collaboration between the President and senior advisors under any circumstances and improves connectivity with the nuclear forces.

Within the aerial domain, we are continuing to replace aging communications systems on the E-6B Airborne Command Post (ABNCP) and Take Charge and Move Out (TACAMO) aircraft as well as the E-4B National Airborne Operations Center (NAOC) to provide assured and worldwide connectivity to the nuclear forces. In conjunction with communications update efforts, the Air Force is pursuing a course of action to recapitalize the E-4B platform, which is approaching its end of service life. The Air Force continues efforts to field a very low frequency (VLF) capability for the B-2 bomber fleet and will leverage that capability to modernize the B-52's legacy VLF systems. These advancements, combined with our extremely high frequency communications, provide bombers with beyond line-of-sight connectivity throughout the spectrum of conflict.

INTERCONTINENTAL BALLISTIC MISSILES

The U.S. relies on ICBMs as a critical component of a credible and effective nuclear deterrent force. ICBMs promote strategic stability as no adversary can defeat our highly responsive and widely dispersed ICBM force with a limited, surprise attack. Additionally, our ICBM force provides the bulk of our day-to-day nuclear alert force with precision and professionalism. Serving over 60 years, our Minuteman force will retire in the mid-2030s, well beyond any deployed strategic missile in the world. We must execute a comprehensive ICBM modernization program to keep the force effective in this rapidly evolving strategic environment.

In August 2017, the Air Force achieved a significant milestone when it awarded the GBSD Technology Maturation and Risk Reduction contract. The future GBSD weapon system will employ modern, proven technology to meet the varied threats of today and incorporate modular architectures able to adjust quickly to advancing adversary technologies. GBSD will employ enhanced security features to counter evolving threats while reducing resource demands. Likewise, GBSD's maintenance processes

employ advanced diagnostic tools allowing us to predict and resolve technical issues before affecting operations.

Finally, replacing 1960 and 1970s technology with state-of-the-art systems will increase effectiveness and provide better platform performance with greater resilience against improving adversary defenses. GBSD will deliver a modern missile system, supported by a fully updated infrastructure, all delivered at lower cost.

BOMBERS AND AIR DELIVERED NUCLEAR WEAPONS

Bombers represent the most visible and flexible leg of the U.S. nuclear Triad. Their presence unambiguously demonstrate U.S. commitment and resolve to deter potential adversaries and assure our allies and global security partners. The bomber's operational flexibility provides the President a number of options in response to a crisis. The combination of stealth and long range denies adversaries the ability to use geography to protect high value assets.

The B-52 will remain in our arsenal for several more decades and is receiving a communications upgrade to ensure command and control connectivity. Additionally, the B-52 requires a radar system upgrade to enhance weapons delivery, improve targeting capability, and improve weather detection and avoidance. Replacing the B-52's engines provides increased combat range, reduced air refueling demand, longer on-station time, and a significantly reduced maintenance footprint.

As our nation's only penetrating long-range strike aircraft, we are enhancing the B-2's survivability to retain the platform's stealth attributes against modern air defenses. Beyond the B-2, the B-21 will ensure we maintain an effective penetrating bomber capable of striking any target around the world even as potential adversaries deploy increasingly sophisticated air defenses.

While legacy gravity bombs and the Air Launched Cruise Missile (ALCM) meet current military requirements, declining sustainability and survivability challenges require a focus on replacement systems. The B61-12 gravity bomb and LRSO cruise missile programs must deliver on schedule to avoid any strategic or extended deterrence capability gaps.

Legacy bombers and their associated weapons are beyond or quickly approaching their intended service life, requiring focused attention and resources to maintain combat readiness. To ensure our air delivered deterrent remains effective, ongoing sustainment and planned modernization activities must remain on schedule.

SEA-BASED STRATEGIC DETERRENT

Every day, a sizable portion of our OHIO-class SSBN fleet is silently patrolling at sea, unlocatable to our adversaries, and ready to respond when called upon. These submarines, and their highly

capable Trident II (D5) SLBM, constitute the most survivable leg of our strategic deterrent force. As such, they send a very clear message to any adversary that they cannot hope to gain any benefit from a strategic attack against the U.S. or its allies.

The robust design of the OHIO-class SSBN, along with a comprehensive maintenance program, allowed its operational life to extend from 30 to 42 years. However, with no engineering margin to extend them further, the OHIO-class SSBNs will retire starting in 2027. To avoid a capability gap in our strategic deterrent, the COLUMBIA-class SSBN must deliver on time for its first strategic deterrent patrol in 2031. Building the COLUMBIA-class SSBN requires highly technical and unique skillsets spanning multiple manufacturing and trade disciplines. As production draws near, we must support our industrial partners' expansion of both infrastructure and training programs to minimize the risk of potential delays.

To avoid two concurrent strategic weapon programs, the Navy extended the life of the D5 SLBM, enabling it to serve as the initial ballistic missile for the COLUMBIA-class SSBN. The D5 SLBM was fielded over 25 years ago, and we must begin a follow-on SLBM program for the COLUMBIA-class SSBN to remain effective to its projected end of life in the 2080s. USSTRATCOM and the Navy will work together in developing the strategic requirements for this follow-on SLBM that continues the unparalleled success of the D5 SLBM.

SPACE

Space is a warfighting domain just like the air, ground, maritime, and cyberspace domains. The DoD, with the National Reconnaissance Office (NRO), is implementing the Space Warfighting Construct. This construct supports the National Space Policy and focuses on the forces, operations, and systems needed to prevail in a conflict that extends into space. As an enterprise, we must normalize how we think of space, operate in it, and describe it to each other. It is unique for many reasons, but the concepts that govern other military operations such as intelligence, maneuver, fires, protection, logistics, and command and control apply just the same.

In April 2017, we re-named the Joint Interagency Combined Space Operations Center (JICSpOC) to the National Space Defense Center (NSDC). The NSDC is a partnership organization strongly supported by both the DoD and Intelligence Community (IC) that develops and improves our ability to rapidly detect, warn, characterize, attribute and defend against threats to our nation's vital space systems. The NSDC directly supports space defense unity of effort and expands information sharing in space defense operations among the DoD, NRO, and other interagency partners. Recently, the NSDC transitioned to 24/7 operations, marking a significant step for the growing interagency team focused on protecting and defending the nation's critical space assets.

In 2016, Air Force Space Command (AFSPC) and NRO developed the joint Space Enterprise Vision (SEV) to advance their shared interest in designing, acquiring, and operating more agile and resilient space capabilities in response to emerging threats. A key goal of the SEV is to leverage synergies in AFSPC/NRO acquisition activities, where feasible, as the two organizations pursue architectures and operational approaches in support of their respective missions.

Multi-national space operations initiatives are paramount in the safety and security of the space domain. As we continue our combined space operations initiative with Australia, Canada, New Zealand, and the United Kingdom, we are expanding the initiative with the addition of France and Germany. I have directed the Joint Force Space Component Commander to transition our Joint Space Operations Center (JSpOC) to a Combined Space Operations Center (CSpOC) by the end of 2018. The CSpOC model envisions a centralized hub for operational planning and tasking with distributed execution through contributing partners.

Exercises and wargames continue to refine how we coordinate today and determine how we will work together in the future. This year, Japan is participating in the Schriever Wargame, joining France, Germany, and our Five Eye partners. GLOBAL SENTINEL, our operational experiment for space situational awareness, increased its international participation in 2017 and now includes Australia, Canada, the United Kingdom, France, Spain, Germany, Italy, Japan, and the Republic of Korea.

Future satellite communications (SATCOM) systems are key to our continued strategic posture in space. We must design and fund replacement systems and remain on schedule for smooth transition of operations to these new systems. We must expand international SATCOM partnerships, strengthen our industrial base response to acquisition challenges, and integrate commercial pathfinder opportunities to leverage space operations.

We must continue to build a robust SATCOM network that includes our allies and partners and leverages commercial SATCOM industries to integrate, synchronize, and share global SATCOM resources. Through multilateral SATCOM agreements Canada, Denmark, Luxembourg, the Netherlands, and New Zealand provided funding for Wideband Global SATCOM-9 (WGS-9) that launched in March 2017. These international partners receive a proportional share of the bandwidth provided by the WGS constellation based on their financial contribution.

The department continues to close the gap in synchronizing terminals and ground infrastructure to match available satellite capability, a time-critical and essential element in operating freely in all other domains. Our protected wideband communications are essential for allowing the warfighter to communicate in contested environments. Our narrowband legacy constellation is approaching the end of its life cycle in a matter of years, and any additional loss of satellites will reduce our narrowband SATCOM capabilities. The narrowband follow-on Mobile User Objective System (MUOS) using

Wideband Code Division Multiple Access (WCDMA) has experienced delays due to program development, waveform challenges, and Service terminal fielding schedules. The fielding of new AEHF Extended Data Rate (XDR) capabilities is improving over time, but delayed XDR terminal programs are hampering the transitions from MILSTAR to AEHF.

USSTRATCOM, in conjunction with AFSPC, Fleet Cyber Command, and U.S. Army Space and Missile Defense Command / Army Forces Strategic Command (SMDC/ARSTRAT), is standing up the SATCOM Integrated Operations Environment (SIOE). The SIOE is designed to leverage key wideband, narrowband, protected band, and commercial SATCOM enterprise capabilities and expertise to improve the Joint Force Space Component Commander's ability to mitigate and fight through SATCOM degradation and continue to support the warfighter in a potentially contested domain. Interim SIOE operations will be located at headquarters SMDC/ARSTRAT and is scheduled for completion in March 2018. SIOE is currently operating in a limited fashion, and we are working on providing additional joint manning positions to bring it to initial operational capability.

In accordance with the direction of the 2018 National Defense Authorization Act, USSTRATCOM will deliver a space warfighting concept of operations (CONOPs) no later than June 11, 2018. This CONOPs will guide the Service's space capabilities development and acquisition programs.

JOINT ELECTROMAGNETIC SPECTRUM OPERATIONS

Achieving superiority throughout the electromagnetic spectrum is an essential prerequisite for achieving superiority across all other military domains. USSTRATCOM developed an electromagnetic spectrum operational employment guide for standardized and synchronized electromagnetic battle management, and we are working with the other combatant commands on the implementation of this guide in joint electromagnetic spectrum operations planning. In coordination with the Joint Staff, we are initiating development of a Joint Electromagnetic Spectrum Operations doctrine publication, working to re-align electronic warfare universal joint tasks, advocating for advancing joint training in realistic congested and contested electromagnetic spectrum environments, and identifying electromagnetic battle management requirements.

This comes at a time when our ability to maneuver freely within the electromagnetic spectrum is at risk. Many countries have adapted their militaries for spectrum warfare, developing specific electronic/spectrum warfare units and electronic attack capabilities to counter our spectrum dependent systems. The electromagnetic spectrum is not a utility to be managed, it is a maneuver space, the same as other warfighting domains. If we fail to change the way we resource, train, and operate within the spectrum, we risk allowing an adversary to control key terrain in the future.

MISSILE DEFENSE

Missile proliferation and lethality continues to increase as more countries acquire greater numbers of missiles and are increasing their technical sophistication specifically to defeat U.S. missile defense systems. In the past year, we continue to see missile tests from North Korea and Iran as well as other nations that are introducing increasingly sophisticated missiles – all of which cause us and our allies deep concern. Their efforts to advance missile technologies threaten global stability and seek to degrade our ability to project power. In response, we must continue our efforts to advance missile defense forces and capabilities to assure allies of our commitment for a common defense and to deter further aggressions from these regional and transregional actors.

In addition to the NPR, the Department is conducting a 2018 Missile Defense Review (MDR). The MDR is broader in scope than the 2010 Ballistic Missile Defense Review, addressing more than the ballistic missile threat, specifically hypersonic vehicles and cruise missiles.

We cannot be successful in this endeavor by investing solely in active missile defense capabilities – we must strengthen and integrate all pillars of missile defense including the capability to defeat adversary missiles before they launch. We are exploring efficiencies gained by fusing non-kinetic, cyber, electromagnetic, and kinetic capabilities to deny, defend, and defeat adversary threats. Furthermore, we are requesting additional efforts invested in the Department's ability to find, fix, track, target, engage, and assess (F2T2EA) threats and the adoption of corresponding policy and organizational constructs. We continue to gain synergy through integrated missile defense planning, force management, and operations support ensuring global coordination of regional missile defense execution – thereby, matching the best interceptor with the best sensor.

We must strengthen our collaboration with our allies and explore further integration of our collective capabilities toward an effective mutual defense. We are investing in collaboration with our allies across multiple venues, including the USSTRATCOM-hosted NIMBLE TITAN wargame. We conduct this biennial wargame with key allies and in partnership with the Department of State and other combatant commands. We continually explore and experiment with potential collaboration and integration approaches with our allies to inform development of options for operations, policies, and investments.

As an essential element of the U.S. commitment to strengthen strategic and regional deterrence against states of concern, we continue to deploy missile defense capabilities and strengthen our missile defense postures. We operationally deployed the Aegis Ashore Missile Defense Complex in Romania completing the European Phased Adaptive Approach Phase II to defend against threats from the Middle East, particularly Iran. We deployed additional Ground Based Interceptors (GBIs) to meet the objective of

44 GBIs by the end of 2017. We are continuing investments toward our warfighting missile defense priorities, which are essential. Priority missile defense upgrades and capability advancements include:

- Sensor and discrimination capabilities. Continued development of the Long Range Discrimination Radar (LRDR) in Alaska. A new homeland discrimination radar to support the defense of Hawaii. A new Medium Range Discrimination Radar to provide additional precision and tracking. Upgraded and expanded land, sea, and space based detection and tracking sensors.
- Kill vehicles. Increase the reliability and lethality of our interceptors including the development of the Redesigned Kill Vehicles (RKV) for the GBI, completion of testing and deployment of the SM-3 Block IIA capability, and enhancements to the GBI, most notably the Multi-Object Kill Vehicle (MOKV).
- GBIs. Increase the GBI inventory to 64 and complete Missile Field-4 at Fort Greely, Alaska to provide silos for 20 additional fielded interceptors as early as December 2023.
- Capability and capacity. Increase the robustness of regional missile defense capability and capacity including deployment of the Aegis Ballistic Missile Defense and the Terminal High-Altitude Area Defense (THAAD) capabilities and implementation of recommendations from the Department's Joint Regional Integrated Air and Missile Defense Capability Mix (JRICM) study.

Finally, we depend on flight-testing, which is critical in assessing and validating the performance of the operational system in actual flight environments. The high cost of flight-testing often limits the number of flight test opportunities. The Missile Defense Agency strives to maximize opportunities for learning through flight test success or failure. The body of data collected in flight-testing is robust, and we discover unexpected findings with each test. Flight test failures are unplanned, but when failures happen – learning occurs. The root cause of failure is determined, corrective actions are implemented, and the overall capability of the system improves.

CONVENTIONAL PROMPT STRIKE (CPS) / HYPERSONIC STRIKE

Adversary anti-access / area denial strategies are challenging traditional U.S. approaches to power projection. Advancements in adversary integrated air defense systems and offensive missiles inhibit our ability to maneuver within the battlespace. Additionally, our strategic competitors are investing significant resources in hypersonic weapon research and development with the goal of deploying hypersonic strike weapons in the next few years. The Department is pursuing hypersonic capabilities

along several lines of effort, but we need to prioritize and accelerate development if we are to field our own capability in the near term.

New long-range, survivable, lethal, and time-sensitive strike capabilities, such as a hypersonic CPS weapon, will allow the U.S. to achieve its military objectives in these environments. This new weapon class prevents adversaries from exploiting time and distance and provides additional response options below the nuclear threshold. The Navy's successful CPS flight test last October demonstrated the technical maturity required to field an effective hypersonic strike solution within the near future. As our competitors continue to move fast in this area, we must retake the initiative and commit the necessary resources to develop and field hypersonic conventional weapons.

CONCLUSION

USSTRATCOM truly is a global warfighting command, and the strength of this command is its people. The Soldiers, Sailors, Airmen, Marines, and Civilians in this enterprise have the most important mission in the entire Department. We expect them to perform to the highest standard, yet mission success often looks as if nothing happened. The hard work and dedication of the nearly 184,000 men and women supporting the USSTRATCOM mission ensures our nation's strategic capabilities remain safe, secure, reliable, and ready. Sustained Congressional support will ensure we remain ready, agile, and effective in deterring strategic attack, assuring our allies and partners today and into the future.

Peace is our profession...

[CLERK'S NOTE.—The complete hearing transcript could not be printed due to the classification of the material discussed.]

THURSDAY, APRIL 12, 2018.

FISCAL YEAR 2019 NATIONAL GUARD BUREAU

WITNESS

GENERAL JOSEPH L. LENGYEL, CHIEF, NATIONAL GUARD BUREAU

OPENING STATEMENT OF CHAIRMAN GRANGER

Ms. GRANGER. The Subcommittee on Defense will come to order. This morning, the subcommittee will hold a hearing on the National Guard and Reserve Components. Today's hearing will consist of two panels. During panel 1, we will discuss topics related to the Army and Air National Guard and Guard joint initiatives.

Our witness for panel 1 is General Joe Lengyel, the Chief of the National Guard Bureau and member of the Joint Chiefs of Staff.

Welcome to the subcommittee. We appreciate your being here today to share the status of the Army and Air Guard and to allow members to gain knowledge from your expertise about this area.

I continue to reiterate as chairwoman of the subcommittee that it is vital to the members of the committee that we hear from our military leadership in order to make decisions regarding funding and the future direction for our national defense.

Additionally, General Lengyel, the committee wishes to recognize the sacrifice of two officers and two enlisted air guardsmen who died on March 15 when their helicopter crashed in western Iraq. Also, a regular Air Force officer and two Air Force reservists died in that crash. Our deepest sympathies to the families of the victims.

There is a lot to cover today with two panels, but I wish to highlight that the Guard continues to be deployed around the world. And the most recent national news related to Guard deployment is the President's recent announcement to use Guard troops to defend the border between the United States and Mexico. The committee has many questions, and I hope we are able to address all of those today.

But, first, I would like to call on the ranking member.

OPENING REMARKS OF MR. RUPPERSBERGER

Mr. RUPPERSBERGER. Well, first thing, thank you for being here. I have been taught years ago that if you are ahead, be quiet and move on, so I will defer back to the chairwoman. And by the way, I will be leaving here soon because we have—the last 2 days we have been having our defense hearings three in a row, so after my question I will probably be moving on. So I hope there is some Democrat that shows up.

Ms. GRANGER. The slight attendance has nothing to do with your appearance and the importance of the issues. The people on this

subcommittee are on usually three other—three subcommittees total, and they are very experienced, and so they will try to be here, and then their appointments and their questions are important in another committee too.

So, General Lengyel, would you like to make opening remarks? And then we will move on to questions. If so, please proceed.

SUMMARY STATEMENT OF GENERAL LENGYEL

General LENGYEL. Chairwoman Granger and Ranking Member, thank you very much for having me here today. Distinguished members of the subcommittee, it is a pleasure for me to be here today. And at this time, I would submit my full written statement for the record.

The National Guard consists of 343,000 citizen soldiers in the Army National Guard and 106,000 airmen of the Air National Guard. They represent the finest National Guard in our 381-year history. And I am honored to represent them, along with the families, communities, and employers who support them.

In the National Defense Strategy, the Secretary outlined the priorities for our military to deter war and protect the security of our Nation. In supporting the National Defense Strategy, my focus remains on our three primary mission sets: the warfight, defending and securing the homeland, and building enduring partnerships.

The Guard is tremendously appreciative for this committee's support in enabling us to accomplish these missions. On any given day, approximately 20,000 men and women of the Army and Air National Guard work seamlessly as part of the joint force in protecting our Nation's interest on every continent.

With approximately 850,000 deployments since 9/11, Guard soldiers and airmen conduct complex operations around the globe supporting commanders in every geographic combatant command. Your continued support allows us to leverage our years of combat experience to help confront current and future security challenges. In the homeland, your investment supports on average about 8,000 Guard soldiers and airmen everyday conducting domestic and homeland security and defense operations.

As you know, the Department of Defense is assigning our guardsmen, under the command authority of their State Governors, the mission of supporting the Department of Homeland Security with its border security mission. Your Air National Guard fighter wings are protecting our Nation's skies in 15 of 16 aerospace control alert sites, including the skies over the Capitol today.

The Guard has over 60 percent of the Department of Defense chemical, biological, radiological, and nuclear response forces that are strategically positioned throughout the United States. Our cyber force will grow to 59 units across 38 States by fiscal year 2019 in addition to the existing 54 Army National Guard defensive cyber operations elements.

Soldiers and airmen in our Counterdrug Program in coordination with law enforcement agencies and other partners detect, interdict, disrupt, and curtail drug trafficking across our Nation, and Army National Guard ballistic missile defense battalions defend the Nation against intercontinental ballistic missiles as we speak.

On top of all this, the National Guard stands ready to respond to emergencies, such as hurricanes, wildfires, flooding, as well as assist law enforcement during times of civil unrest, missions the National Guard performs with little or no notice. This past year, over 45,000 men and women of the National Guard responded to Hurricanes Irma, Harvey, and Maria, while simultaneously supporting wild land fire fights across the numerous States.

The National Guard was called 255 times and served more than 1.8 million man days, responding to the homeland emergencies in fiscal year 2017. Our presence in our communities around the Nation uniquely postures us to respond when our communities need us. The same investment that enables the National Guard's success in the warfight and homeland operations also helps build enduring partnerships with international, Federal, State, and local partners.

The National Guard, through the State Partnership Program, currently partners with 79 nations. This low-cost, high-return program builds enduring partnerships based on mutual trust and generates contributions to coalition efforts around the world. On the Federal, State, and local level, our deep partnerships with the National Guard unique authorities ensure a speedy response with unity of effort during times of domestic crisis.

Our Nation is currently facing ever-evolving security challenges. I am thankful for this committee's recognition and support of your National Guard's role, both in the homeland and abroad. For instance, this committee's support of the National Guard and Reserve equipment account allows our force to improve its ability to perform across the broad spectrum of contingencies here at home and overseas.

Today's operational National Guard requires concurrent and balanced modernization and recapitalization with our Active Components. This committee's commitment to modernization and recapitalization on platforms such as F-35s, and KC-46s, and C-130Js, Black Hawks, and Humvees, ensures that the National Guard is a seamless, interoperable total force partner supporting the National Defense Strategy.

Finally, programs such as the State Partnership Program and Counterdrug Program allow National Guard to leverage its unique attributes to strengthen relationships overseas and aid domestic law enforcement and counter illegal drugs.

Again, I am honored to be here representing the men and women of the National Guard and the families who support them. Thank you very much for the continued support, and I look forward to your questions.

[The written statement of General Lengyel follows:]

WRITTEN STATEMENT BY

GENERAL JOSEPH L. LENGYEL

CHIEF, NATIONAL GUARD BUREAU

BEFORE THE

HOUSE APPROPRIATIONS COMMITTEE

SUBCOMMITTEE ON DEFENSE

SECOND SESSION, 115TH CONGRESS

ON

THE NATIONAL GUARD

AND RESERVE POSTURE HEARING

APRIL 12TH, 2018

NOT FOR PUBLIC DISSEMINATION

UNTIL RELEASED BY

HOUSE APPROPRIATIONS COMMITTEE

INTRODUCTION

Chairwoman Granger, Ranking Member Visclosky, and distinguished members of the subcommittee, it is a pleasure to be here today with my fellow Reserve Component Leaders.

Today's National Guard is the most relevant it has ever been. I have lived through the transformation of the Guard from a good, reliable, and competent strategic reserve, to a combat-tested and experienced operational force that works seamlessly with the Army and the Air Force. We are witnessing the best National Guard in our history, but there is more to be done as we face challenging times ahead.

As Chief of the National Guard Bureau, my focus every day is accomplishing our three core missions – fighting America's wars, securing the homeland, and building enduring partnerships. This past year, our Guardsmen and women performed these missions magnificently and I could not be more proud of their commitment and dedication.

As the new National Defense Strategy acknowledges, we live in an increasingly complex global security environment where the character of war is changing. We are no longer safe at home as the current threat environment blurs the lines between domestic and overseas threats, with many of these threats transcending regions and domains of warfare. We must compete globally, across the engagement spectrum. We must build a more modern, lethal, agile and resilient force to respond to these challenges and the increasing volatility of our

security environment. Maintaining an operational National Guard, as a part of the joint force, is critical to this end.

WARFIGHT

Fighting America's wars will always be the primary mission of the National Guard. The National Guard supports the needs of the Nation, the Army, and the Air Force as an operational warfighting force providing strategic depth, designed with a balance of combat and enabling units that largely mirror our active Army and Air Force. As the primary combat reserve of the two services, the Guard is a critical element of the joint force.

The nation needs a Guard that is ready, rapidly scalable and accessible with little or no notice for any contingency to meet any need. When mobilized and deployed, the Guard is interchangeable with its active components, providing the joint force highly trained capacity and capability for the fight. Further, today's National Guard Soldiers and Airmen expect to be deployed and then employed fighting and securing America's national security interests.

Thousands of Guardsmen and women serve around the globe on any given day. Today, we average around 20,000 Soldiers and Airmen mobilized in places such as Afghanistan, Syria, Iraq, the Sinai, Europe, and South America. However, this is well below our level of mobilizations at the height of the wars in Iraq and Afghanistan. I believe we have the capacity to increase the number of mobilized Guard units over the next several years to support combatant commands around the world countering threats wherever they exist. Guard utilization can be

maintained indefinitely when mobilizations are recurring, rotational, sustainable, predictable, and resourced.

HOMELAND

Here in America, the National Guard plays a unique role. Our dual-use nature and robust presence in 2,600 communities in our states, territories, and the District of Columbia, gives our National Guard the ability to quickly and efficiently respond to contingencies. Our experience and capabilities, gained from conducting complex combat operations, are utilized in coordinating a unified response across local, state and federal agencies using the dual-status authorities that permit the Guard to be employed under state or federal command during domestic emergencies.

The homeland is part of the global battle space. In the past, America benefited from its favorable geography with friendly neighbors to the north and south and large oceans to our east and west as natural barriers. Today, we no longer enjoy this safe haven as a result of new technologies and weapons that can reach the heart of America with little or no warning. Additionally, our competitors use cyber in various ways that include information campaigns as a means for influence. We must compete every day to safeguard our way of life.

Proliferation of nuclear, biological, and chemical weapons, and high-yield explosive devices has increased the threat of a weapons of mass destruction (WMD) attack on the United States. Delivery mechanisms for these kinds of weapons have also multiplied, and our adversaries continue to probe for weaknesses in our

defense. In any future conflict, space and cyber attacks will be the norm and will have extensive impacts on American civilians and our nation's infrastructure.

In addition to around 20,000 Guardsmen and women mobilized around the world, on average, about 8,000 Guard Soldiers and Airmen conduct domestic and homeland security/defense operations in the United States on any given day. The National Guard Counterdrug Program assists law enforcement with the detection, interdiction, disruption and curtailment of illicit drug trafficking. We support governors and state agencies during emergencies by providing life-saving aid to devastated regions ravaged by disasters such as wildfires and hurricanes. We safeguard our skies by operating from 15 of the 16 Aerospace Control Alert sites within the United States. Guard battalions in Alaska and Colorado protect our citizens from ballistic missiles, a threat that is more immediate now than ever before. The National Guard also provides over 60 percent of the Department of Defense's chemical, biological, radiological, and nuclear (CBRN) response forces, capable of responding to a host of CBRN threats to our homeland. National Guard cyber units will grow to 59 units across 38 states by FY19 in addition to the already existing 54 Army National Guard Defensive Cyberspace Operations Elements.

This past year, the National Guard responded to Hurricanes Irma, Harvey, and Maria where a total of approximately 45,000 Guardsmen and women supported recovery efforts. Simultaneously, the National Guard supported wildland firefighting efforts across several states. The nation had to galvanize its efforts and resources to provide resiliency and stability to the communities affected

by these disasters. The National Guard was there every step of the way, and I could not be more proud of our Soldiers and Airmen. Further, we supported all of these events while we continued to meet our deployment requirements. We will utilize the experience we gained in responding to these recent disasters and benefit from lessons learned as we continue to improve and increase coordination with our partners in order to achieve unity of effort within a whole-of-government response.

BUILDING PARTNERSHIPS

In today's security environment, threats are increasingly global and multiregional. As the National Defense Strategy outlines, our alignment with allies and partners provide a durable and asymmetric advantage over our adversaries.

Twenty-five years ago, the National Guard began its State Partnership Program (SPP) to assist the countries of Eastern Europe reform their defense sectors, improve preparedness, and develop leaders. With the recent signing of the Malaysia -Washington State partnership, the SPP has grown to include 79 nations, roughly one-third of the nations in the world, and more partnerships are planned for the future. We have seen the fruits of these relationships, which are built on trust, the exchange of ideas, and mutual respect. Our partnerships are located in strategic regions around the world and support the transition of many nations from security consumers to global security providers.

The SPP provides a low-cost mechanism that bolsters U.S. security by, with, and through allies and partners. By building these enduring partnerships, we secure partnerships and commitments and help develop new ones.

The National Guard's emphasis on partnerships did not begin with the SPP. Throughout our history, based on our state mission, the National Guard had the responsibility to safeguard our citizens. This naturally led us to build partnerships with state and local agencies and officials. Today, we are part of multiagency integrated playbooks that governors use in planning for and responding to crises. States can call on us to augment their organic response as we bring what the Department of Defense brings, such as manpower, training, leadership, organization, logistics, and communications to help rebuild communities after a catastrophe. Developing cooperation and long-standing partnerships over time is a core competency of the Guard.

The National Guard is a community-based force with many of our members working and serving where they live. We're integral to the life of our local communities. Whether partnering with local chapters of Youth ChalleNGe and Joining Community Forces, or assisting local responders after a heavy snowstorm, the saying is quite appropriate – when you call out the Guard, you call out America.

THREE PRIORITIES

This past year saw a confluence of factors shaping our security environment. Near-peer competitors continue to test longstanding international norms and engage in activities that are just short of conflict, yet whose actions provoke, disrupt, and destabilize the global order. Other nations such as North Korea and Iran not only threaten regional territories, but also our citizens here at home as

they continue to fund terrorism and develop increasingly sophisticated ballistic missile technology. Catastrophic disasters such as hurricanes and wildfires challenged the limits and capacity of our responders.

In light of these challenges and those that lie ahead, I have laid out three priorities to respond to our current threats and capture my vision for the Guard's future - provide ready forces to the President and our Governors, take care of and develop our people, and innovation.

PRIORITY #1: READINESS

The past 17 years of continuous combat experience has instilled focused discipline into our training process. We are part of the Nation's operational force which regularly and routinely contributes to the warfight. Consequently, I believe we have the best relationship in our history with our active components.

In building a more lethal Joint Force as directed by the National Defense Strategy, the National Guard must ensure readiness. Readiness begins with our force structure and the Guard must have a balanced array of combat and enabling forces that largely mirrors the Army and the Air Force. Readiness also includes resourcing the National Guard through appropriate levels of full-time support, modernization and recapitalization of equipment, replacing and upgrading Guard facilities, and recruiting and retaining the best men and women to enhance the readiness of our force. Investment in high-level collective training opportunities, such as Combat Training Center rotations and Red Flag exercises, builds the readiness of the National Guard, develops leaders, preserves readiness in the

active components for contingency operations and supports critical joint force requirements. Increased combat readiness also enhances our ability to respond quickly and effectively, saving lives and property in the homeland.

The Army maintains readiness as its top priority. The Army National Guard (ARNG), which comprises nearly 34 percent of the Army's manpower and provides approximately 39 percent of the Army's operational force, continues to provide rotational forces for named operations, enabling active component forces to support contingency plans. In addition, the Army Guard always remains responsive to governors in supporting civil authorities with such disasters as hurricanes, floods, wildfires, and tornadoes – just as we did this past year.

In FY17, the Army National Guard supported 68 exercises worldwide. Additionally in 2017, more than 150 Army Guard units participated in collective training exercises at Combat Training Centers which resulted in increased mission readiness. Beginning in 2018, the Army National Guard Combat Training Center rotations double, from two to four per year, for our Brigade Combat Teams.

At the forefront is maximizing unit readiness in order to reduce post-mobilization timelines. The ARNG recognizes the importance of modern facilities for today's Soldiers and their equipment. As we continue to invest in developing and improving installations and facilities for optimum training and efficient mobilization, we will develop leaders for the total force and, as always, maintain proper stewardship of our nation's resources.

The Air National Guard continues to utilize its multi-component dual-use capability at home and abroad. We work seamlessly with the Air Force and maintain the same standards of operational readiness and cross-component operational capabilities. Guard Airmen, comprising approximately a quarter of the Air Force's total manpower, supported deployment requirements in 56 countries in FY17. At home, our Airmen responded to raging wildfires and provided lifesaving support and comfort for victims of Hurricanes Harvey, Irma, and Maria. In addition, the Air Guard continues to protect our skies as the primary force provider for the North American Aerospace Defense Command. The Air National Guard is focused on readiness for today's fight while simultaneously developing 21st Century Guard Airmen and preparing for tomorrow's fight.

PRIORITY #2: PEOPLE

Our three core missions cannot be accomplished without our most important weapon system, our citizen warriors, symbolized by the Minuteman. They provide the foundation on which all our capabilities reside.

Our Guardsmen and women have been answering the call since the first militia regiments were organized in Massachusetts in 1636. While the underlying principles of the Minuteman remain constant, ready to defend our communities and our nation, the Minutemen of the 21st century are a premier force that is a key component of the joint force. They are adaptive and innovative, often bringing diverse and new ideas on how to accomplish different missions.

In order to maintain this unique and talented force, we have to ensure the well-being of our Guardsmen and women, including support for our families and employers.

Respect throughout our ranks must be second-nature and we will always strive to be the most diverse force we can be. We will not tolerate acts such as sexual assault, sexual harassment, and any forms of social media that degrade or demoralize unit cohesion and readiness. We must ensure all victims receive our utmost support and care.

With respect to suicides, any Soldier or Airman who takes his or her own life is one too many. We must ensure our service members look out for one another. Every first-line supervisor, battle buddy and wingman should have the requisite training that equips them to look out for fellow Soldiers and Airmen. We are emphasizing mental health and resiliency for our units and leaders as we strive to prevent suicides.

Our families also faithfully commit to our nation, states and communities when a Guard member serves. We must take care of our families by ensuring they are aware of family readiness programs, employment assistance programs, and where to turn to when they need help.

Although the increased demand that is placed on the National Guard will add stress to the Guard's part-time force and our business model, we will continue to adapt. Guard Soldiers and Airmen offer employers a culture of selfless service, an immeasurable benefit brought to the job through their military training,

experience and leadership. At the same time, the National Guard benefits from the civilian skills our men and women bring from their employers. To protect this business model, we must do our best to provide as much predictability as possible as we train our forces to answer our nation's call. We owe this measure to our dedicated service members, their families, and our employers.

PRIORITY #3: INNOVATION

Innovation is inherently in the DNA of the National Guard. National Guardsmen and women bring unique solutions to different problem sets using their dual-life military and civilian experiences. For example, many of the scientists, engineers, and technology experts we see in the private sector, are also members of the National Guard.

I have created the National Guard Innovation Team which gives me a direct conduit to Soldiers and Airmen of all ranks who can lend their diverse expertise in tackling some of the most challenging issues we face as an organization. However, every Guard Soldier and Airmen should be empowered to be innovative. We all need to work together to find solutions for issues that can have wide implications for the Guard such as more effective organization, recruiting, communications, and employing social media more effectively. Looking at the spectrum of threats at home and across the world, we need innovative minds more than ever.

We need to harness the intellectual capital resident in the Guard. By developing imaginative solutions and inspiring our culture to be more willing to

evolve and change, we will become a stronger, more efficient and effective National Guard.

CONCLUSION

I am proud to represent the 450,000 Soldiers and Airmen who serve in the National Guard. We are an organization steeped in history and tradition. However, I believe the best is yet to come.

Thank you for your continued support of the members of the National Guard and their families.

BORDER SECURITY MISSION

Ms. GRANGER. Thank you so much. I want to make members aware, of course, that we will be using a timer and each member will have—we are going to start off with 5 minutes and we may have to go down to a smaller number because we have two panels. It sort of depends on how many people come in. You will have a yellow light on the timer, for the witnesses, and when it shows that you have 1 minute remaining, it will be yellow, and it will turn to red.

General Lengyel, thank you for your opening remarks and reminding all of us about the unique duties and responsibilities of the Guard. We visited yesterday, you were kind enough to come to my office and talk about some of this. And they have—because they are people who are working in other jobs most often during the time, so it takes a great deal of commitment from those in the Guard, but also from their employers. So it is unique, and I know that we all appreciate them so much because, in our own communities, we have seen what they have done so many times.

I would like to start with a question that is probably most on people's mind right now having to do with the Guard. So I would like you to give us an update on the recent announcement the National Guard will be support at the border. And if you know this, how many forces are we talking about, where would they be deployed, what kind of role they would play, and would this role comply with our applicable laws? And, finally, what is the Pentagon's plan to pay for these forces?

I know that you can't, or I would be surprised if you could answer all of those because you don't have all of that information, but if you could, answer what you can, and let us know how to prepare for the future.

General LENGYEL. Yes. Chairwoman, thank you for the question. It is important and it does convey kind of a unique capability that the National Guard has in the homeland. Last week, on the 4th of April, the President had a proclamation suggesting that the National Guard would be used in a title 32 status to help the Department of Defense assist the Department of Homeland Security in the border security mission.

The border security mission effectively is a national security issue, and the Secretary of Defense, in coordination with the Secretary of Homeland Security, are working together to increase the security on the southwest border using the National Guards of the States. And right now, it is only the States along the southwest border—Texas, New Mexico, Arizona, and perhaps soon to be California—to deploy their National Guard in a title 32 status under the commanding control of the Governors to assist the Customs and Border Protection Agency with security at the border.

As of right now, the way it is working is CBP is providing requirements through DHS to the Department of Defense. The Secretary of Defense has created a border security support cell in the OSD staff that is validating those requirements. Once those requirements are validated by the Assistant Secretary of Defense for Homeland Security—Homeland Defense and Global Security, which chairs this border security cell, they are relayed to the National

Guard in the States to be filled with National Guard soldiers and airmen who can assist CBP in accomplishment of the security.

The missions and roles that they are playing on the border security are things that assist and free up the Customs and Border Protection agents to actually go to the border and do law enforcement. The National Guard is doing things such as surveillance, such as maintenance, such as engineering activities, such as transportation and aviation alike, to free up the badges, if you will, to put them on the border.

Things the National Guard is not doing: The National Guard is currently not doing direct law enforcement themselves. They are not doing hands-on work with migrant issues as they come across the border and are apprehended—but not by the National Guard. The National Guard is not doing any of that.

As I speak to you today, there are 782 National Guard soldiers identified that are actually on the border assisting CBP in their border security role, and the preponderance of those are in Texas and Arizona. It is unknown what the total number will grow to be. They are capped by the Secretary of Defense action memo to a level no higher than 4,000 total soldiers in support of the mission.

With regards to funding. The funding of this is it is unknown exactly how long it is going to last, how big it is going to be, and what the total funding operations required to support it will be. In the Secretary of Defense action memo on the 6th of April, he tasked the comptroller of the Department of Defense to ascertain sources of funding to support this effort, to make him aware of issues with respect to funding that may impact the mission sets, and, if required, to notify him of any reprogramming actions that may be necessary to allot proper funding into the right places so that we can conduct the mission and maintain the readiness of the force.

And, you know, I would ask that this committee look favorably on any reprogramming actions that would come this direction to use the funds that the National Guard has appropriated for the readiness of the force, such that we can use them to make the force ready for the longer term.

Ms. GRANGER. Thank you so much. There might be others that will have questions about that. We will now go to Mr. Ruppersberger.

TASK FORCE ECHO

Mr. RUPPERSBERGER. Usually I try not to knock our President; I don't think you get anywhere with it. But when I totally disagree, I do want to make a statement, and then I am going to get into what my real question will be, if I have time. I really think this is really a waste of time for our National Guard to be there.

Unfortunately, our President seems to rule more on his instincts than he does on planning. And I would hope that the Secretary of Defense and the Secretary of Homeland Security will be able to persuade him where the role is. If you look at the numbers as far as immigration, those numbers are really down. What the real issues are on the border, in my opinion, are drugs and fentanyl, and these are the issues we have to deal with. And I would rather

see him take more DEA agents and put them there than National Guard. I think there are other things that you could do than just being there in support. With that said, I just thought I had to say that.

I am going to talk about the issue of Task Force Echo. And this is a groundbreaking Army National Guard task force supporting U.S. Cyber Command at Fort Meade, which Chairman Frelinghuysen will tell you is in my district. At least he reminds me of that.

Task Force Echo has proven very successful, and it is my understanding that this mobilization will be continued by a new iteration of Guard members. I applaud the decision to extend this mobilization to conduct critical national cyber missions. This is the first of its kind. Mobilization has brought soldiers from seven different States to conduct missions for U.S. CYBERCOM. Not only does the continuation of Task Force Echo make our Nation more secure, it enhances partnerships between our Guard and Active Components, and, in addition, benefits States and industry as well.

The Task Force Echo initiative has certainly benefited from the inclusion of experienced Guard soldiers with diverse technical cyber backgrounds. My questions are, first: Using Task Force Echo as an example, are there other similar initiatives that you are considering in that field? And what are the challenges you face of supporting such critical national needs?

General LENGYEL. Thank you, sir, for that question. I mean, across a cyber enterprise, I think the National Guard is able to be a force provider and contribute greatly to the cyber defense of the Nation. Task Force Echo is a great example, sir, of what is going on in Maryland National Guard. I think that the contribution that this task force will make and has made at U.S. Cyber Command is recognized—

STATE PARTNERSHIP PROGRAM

Mr. RUPPERSBERGER. And I point it out because it is very important to move forward and having National Guard involved. The other question I have, General, as you know, the National Guard plays a critical role in deterring Russian aggression.

Now, Maryland's State Partnership Program, for example, has created a top-notch cyber capability in Estonia. I have visited them in Estonia. In August of 2017, the Estonian defense forces and the Maryland Army National Guard conducted a joint cyber defense exercise entitled Baltic Jungle. I believe these operations are critical to showcase to Russia that our National Guard cyber units are just as effective as those in the—as the Active Component of our military.

My question, in your opinion, what is Russia's assessment of our National Guard's cyber units? What challenges do you have in recruiting soldiers to fill these roles? I will say I believe you have 500 people in Estonia right now dealing on this cyber issue, and it is very successful.

General LENGYEL. Sir, I think the Russians look at the National Guard in cyber as they do across every other piece of military operation that we do. They see us as part of the United States Army and part of the United States Air Force with similar capabilities.

And I think that the National Guard cyber capability—to bring special cyber relationships that they have and in the State Partnership Program with Estonia is hugely successful.

Mr. RUPPERSBERGER. I yield back. Thank you. Oh, do you have more to say?

General LENGYEL. No. Thank you.

Mr. RUPPERSBERGER. Okay. Good. I yield back.

Ms. GRANGER. Thank you. Chairman Frelinghuysen.

COSTS OF DEPLOYMENT TO THE SOUTHWEST BORDER

Mr. FRELINGHUYSEN. Thank you, Madam Chairwoman. Certainly, on behalf of the committee, thank you for the remarkable things the National Guard does around the world. I know that there is bipartisan support for what we call the NGREA accounts. And I think over the last 2 or 3 years and certainly under the chairwoman's leadership those accounts have been robust, and hopefully the equipment that you have requested is—we are meeting some of your needs. We are also meeting just the issues of readiness that affect obviously the regular force as well as the National Guard.

I, too, have some questions on the deployment. The Secretary of Defense was specifically authorized under title—under title 32, section 502(f), is it authorization for 4,000?

General LENGYEL. It is up to 4,000 yes, sir.

Mr. FRELINGHUYSEN. It is a little unclear to me, maybe because this is a recent announcement, who is paying for what. You are making a plea for reprogramming, which—who is actually paying for what?

General LENGYEL. Chairman, to be clear, as I haven't made a plea for reprogramming yet because, as I said in my remarks, I hope to make it clear that we don't know yet what the total financial cost of this operation is going to be.

So, under 502(f)—502(f) authority, title 32, is federally funded and temporarily using the accounts of the National Guard, O&M and personnel accounts, to fund this operation on the border. And that is money that I have. So the National Guard will use those funds to fund the validated requirements, it is validated by OSD, and authorized to the States to put on the border, and so that is who is paying for this.

Mr. FRELINGHUYSEN. So, actually, what people are doing—so is there the width and breadth of what people are allowed to do now?

General LENGYEL. Yes, sir.

Mr. FRELINGHUYSEN. Are there limitations? I know there are limitations that your personnel cannot conduct civilian law enforcement activities. Is that right?

General LENGYEL. Yes, sir. In 502(f) status, the actual action memo says specifically that, without explicit consent from the Department of Defense from Secretary Mattis, that they will not do law enforcement activity on the border.

Mr. FRELINGHUYSEN. There is that term that the National Guard—and this is actually not just in this instance, but in the past, correct me if I am wrong, that the National Guard has performed what are often referred to as other duties in support of Department of Defense missions. Is that—do you anticipate other du-

ties being given to you? And have they been given to the Guard in the past?

General LENGYEL. We have performed duties in 502(f) before. If you use as an example, after 9/11, when they put National Guard soldiers into the airports to do security, they were federally funded but yet managed and under the control of the Governors in the States with which they perform that duty. It is a similar situation here with which they are being provided Federal resources, again, in support of the Department of Homeland Security and CBP, in areas that CBP realizes that they need assistance, such that their agents can be freed up to do more direct law enforcement-type operations.

Mr. FRELINGHUYSEN. So is the border control, is the Department of Homeland Security likely to reimburse you for that, or is that something you are going to be carrying as an ongoing cost?

General LENGYEL. I believe this is—reimbursement is not mandated from the Department of Homeland Security for this particular act. But I would—I would get back—request to get back with you if that is it, but I do not anticipate any reimbursement from the Department of Homeland—

Mr. FRELINGHUYSEN. Obviously, this is a policy that they laid down. I think more information rather than less information as it comes to you would be extremely beneficial to all of us here. Thank you, Madam Chair.

Ms. GRANGER. Ms. Kaptur.

STATE PARTNERSHIP PROGRAM

Ms. KAPTUR. Thank you, madam chair. Welcome, General, and all your colleagues. I am a big supporter of the Guard, and I represent many of those soldiers that fight for us at home and abroad. Thank you for your work. I am going to focus just on two areas initially, one is the State Partnership Program, which for Ohio means Hungary and Serbia, but I am quite interested in California's partnerships with Ukraine.

And my question really attends really to the funding levels in that program. If you could focus on that. What you have requested compared to the current fiscal year. And also a suggestion, because I have just returned from Ukraine, and if we are going to win that battle and somehow blunt Russia's propaganda, which is 40 times what the West pumps in there, we are going to have to deal with the soldiers in the field in a more effective way.

One of the things I discovered is that many of Ukraine soldiers have PTSD, those who are currently serving, younger soldiers, and also soldiers who fought under Soviet mandate in Afghanistan from years ago. My question really is, how could you, in your leadership role, provide apps and devices where soldiers who have these illnesses could literally self-treat as opposed to having nothing in the field?

Do you have the capability using the defense health capabilities that exist within DOD and the Guard to use California or other States who have Ukrainian-language-speaking health professionals to try to get apps down into people who literally are facing a third deployment to the front, and they have PTS with no help? How do we deal with that issue?

General LENGYEL. So, Congresswoman, thank you for that question. So the State Partnership Program, as you know, in California is very engaged in Ukraine. And they have, you know, a wide range of opportunities to help integrate and assist the Ukraine military forces in a wide number of ways, all through the combatant command. So I think that should they decide that the combatant commander decides that that is a good opportunity and good use of State Partnership Program, then those activities could be proposed and part of State Partnership activities.

Ms. KAPTUR. Could you get somebody back to me on that, please?

General LENGYEL. Yes.

Ms. KAPTUR. I would greatly appreciate that. And I would like to know if there is funding to do that, if you are asking for sufficient funding to accommodate something like that if it proves beneficial.

General LENGYEL. Yes, ma'am, I will get back to you. I do not have funding that I am aware of to develop apps and use them in the Ukrainian system. That would probably require some additional funding levels. In general, with regard to the State Partnership Program funding, we get about \$16 million a year for State Partnership funding. We get about 8 of that through the Army and the Air Force, and the rest is a congressional add that we get.

Sometimes it is hard for us to use all of the congressional add because of the timing of the actual budget when we get the appropriation. We feel like we need about twice that total amount, about \$29 million totally, to get all of the State Partnership activities. The State Partnership has grown now since Ukraine was one of the original 13 members, and now it has grown to 80 partners and funding commensurately has not grown. So I would make a pitch to say that—

Ms. KAPTUR. Thank you for pointing that out, General. Thank you. I also wanted to add—

Mr. VISCLOSEKY. Would the gentlewoman yield for a second? I just want to make sure—you would yield?

Ms. KAPTUR. I am pleased to yield.

Mr. VISCLOSEKY. If I understand correctly, just so we are clear, you are at \$16 million in that account today, General?

General LENGYEL. Yes, sir.

Mr. VISCLOSEKY. And under optimum circumstances, given the demand in increase requests for partnerships, you would need \$29 million?

General LENGYEL. Yes, sir.

Mr. VISCLOSEKY. Thank you very much.

NATIONAL GUARD COUNTERDRUG PROGRAM

Ms. KAPTUR. I thank the gentleman for clarifying that. I also wanted to move to the National Guard Counterdrug Program. Obviously, Ohio is heroin alley and fentanyl alley in my district, right near where I live actually. About a week ago, enough fentanyl was discovered to kill everyone in my district five times over, and it is just staggering.

So my question really is, what are you doing on this front in co-operation with localities or at our ports of entry in order to try to stem the flow and deal with the crime associated with this? I sort

of mimic Mr. Ruppersberger's comments, if we are going to send anybody to the border—the three buzzards who did this in our district came from Houston, and they drove up. And it was just—I can't tell you what an impact it has had across our community, just the worrisome nature of all of this.

General LENGYEL. Yes, ma'am. The Counterdrug Program throughout the National Guard provides a lot of great assistance to the local, State, Federal, Tribal law enforcement agencies that try to deal with this issue across the Nation. Every State has a different problem set in their individual States, as determined whether it is—where the crime comes from, what the specific problems is, the origination of what it is. But what has grown across the Nation is the opioid crisis.

Ms. KAPTUR. General, could I ask you somehow to have—provide me a summary of the funding that you are asking for in this account, what currently exists, what could exist, your best practices across the country. I am specifically interested in Ohio, selfishly, but it is connected to points of entry in Texas and California and so forth.

So I would like to know your broader perspective? Who is in charge of the program? I really would like to meet with those people.

General LENGYEL. Yes, ma'am. Well, I can come to your office and make sure that you get the right people. But the money that we need—

Ms. KAPTUR. Yes.

General LENGYEL. The total program to run the Counterdrug Program as we do right now is \$200 million, plus \$20 million for the five schools, and that is the total number that we need to—

Ms. KAPTUR. \$220 million.

General LENGYEL. \$220 million.

Ms. KAPTUR. And that is at current levels?

General LENGYEL. Current levels. Yes, ma'am.

Ms. KAPTUR. All right. Thank you.

Ms. GRANGER. Mr. Rogers.

RECRUITING REGIONAL TRAINING INSTITUTE

Mr. ROGERS. Thank you, Chairwoman.

Let me follow up with Ms. Kaptur's line of questioning on counterdrug activities. This is an epidemic we have not seen the likes of before, as you well know. We are losing around 60,000 Americans a year on prescription pill and heroin overdoses. Now we have the sinister new twist to that: As we have begun to successfully crack down on pills, heroin becomes cheaper and more available, and now it is being laced with this God-awful sedative, fentanyl.

At least with pills you knew the dosage, but with the heroin-laced fentanyl, you have no idea what the power of a dosage is. And I am sure it is having an effect on your recruiting, is it not? The use of drugs?

General LENGYEL. Sir, recruiting is becoming more of a challenge for us, and people are excluded from joining military because of previous drug convictions and the like. It is having an impact. I can't tell you how much, but it is having an impact.

Mr. ROGERS. Well, to follow up on Ms. Kaptur's questions about your counterdrug budget items, you mentioned the five regional centers. Some are criticizing those centers that the instructors are retired law enforcement people instead of National Guardsmen. What do you say to that?

General LENGYEL. Well, sir, I think we run the schools. It is a combination of people who understand how to blend the military and the law enforcement capacity together. I think our goal is to provide the best instructors, regardless of what their background is and where they come. Some are National Guard soldiers and airmen, and others are contractors. And I think that is what we try to do is keep them filled with the best possible instructors to get the best instruction to the field that we can get.

Mr. ROGERS. Tell us what those centers are for and what they do and who runs them and why?

General LENGYEL. So there are five separate centers and their job—they exist to use our expertise in law enforcement, and many of our Guard members are, in their civilian lives, law enforcement officers and the like and professionals, and they provide specific up-to-date current instruction on tactics, techniques, procedures, operational issues related to opioids, related to fentanyl, opioid trafficking and the like, so that we can better detect, interdict, stop the flow of narcotics and illegal drugs across the Nation.

Mr. ROGERS. Are the centers aiming at stopping the use of drugs by National Guardsmen, or is it a local law enforcement effort that—

General LENGYEL. It is a law enforcement effort, sir. They don't focus specifically on preventative issues. That is not the role of the National Guard or the counterdrug program. It is to facilitate the law enforcement activities to actually stop, find, interdict illicit drugs and trafficking.

Mr. ROGERS. Well, I mean, we have DEA. We have got local State Police. We have got local police. We have got all sorts of people who are devoting themselves entirely to the counterdrug operation. Why do we need these schools that apparently are trying to do the same thing as we have forces already there for it?

General LENGYEL. Sir, I am told these schools are extremely capable and have valuable instructors. I haven't been to one myself, but if you would like, I will go to one and come to your office and give you a more indepth report on the specifics of these schools.

Mr. ROGERS. Well, we are spending a good deal of money on these five different regional centers, whose purpose I have no idea what it is, and why the National Guard is running these training centers, supposedly. Why is that so?

General LENGYEL. Sir, I think that the individual States that run these, you know, as I said again, the law enforcement agencies that attend them say that the product is a useful product, and it is a valuable school for the law enforcement agencies that go. And I really don't have a better answer for you than that.

Mr. ROGERS. Well, could you get me something about it?

General LENGYEL. I will, yes, sir.

Mr. ROGERS. There is no one—all of us are deeply concerned about this horrendous epidemic that is sweeping the country unabated, and we have got to marshal our forces to tackle every

element. And these training schools may be very critical. I don't know. I hope they are, but we need to know whether or not they are doing their job, and why they are there, and is it a wise investment of our dollars?

General LENGYEL. Yes, sir.

Mr. ROGERS. Thank you, sir.

Ms. GRANGER. Mr. Visclosky.

READINESS

Mr. VISCLOSKY. Thank you very much, Madam Chair.

General, we continually talk about readiness in the subcommittee, and it means something to the Guard as well. Could you, given the approximately 344,000 soldiers in the Guard, 60,000 of which are Active Guard and Reserve, tell us what readiness means to you? And relative to making sure you are in top form, is there a need to change that ratio, if you would, to more full time so you are prepared? What does readiness mean to you in that regard?

General LENGYEL. Yes, sir. I think that for us to quantify the readiness of our units and our formations to do our wartime mission is the most important thing that we do. So do we have the right people? Do we have the right equipment? Have we got the right training and to do our military job so that we are assessed as capable to bring what the Army and the Air Force need for us to bring?

I would tell you that, from a readiness perspective in the National Guard, if we are to make our readiness better and higher, some of the things we have already done to make this operational force more ready are to add additional training devices. Like the Army has added from two combat training center rotations a year to four combat training center rotations a year. That will help grow more ready brigade combat teams for the United States Army.

But more fundamentally, the force that generates that readiness so that, when they go to the combat training center, they can actually do the training at this high level of collective training that they are doing, it requires full-time support inside the Army National Guard to build the foundational levels of readiness that we do—that we need.

So, right now, that full-time number, that is close to what we have—about a little less than 60,000 is what is inside the Army National Guard—that is about, of the total force, it is about 16.5 percent of 343,000 people. I would offer to you that I think that to increase our readiness, we need to raise the level of full-time support inside the Army National Guard.

Mr. VISCLOSKY. Have you made a specific request in your budget submission to us as to what that number should be and what the additional cost would be?

General LENGYEL. So what we have asked for this year is a relatively small number; it is 440 additional recruiters, such that we can go recruit more people in.

Mr. VISCLOSKY. Let me ask you this, because I have a couple other things, and we have some other members. Over and above those recruiters, if you had the resources for more Active Guard and Reserve for that readiness, could you effectively and efficiently

use it, and, if so, could you provide the subcommittee with that number?

General LENGYEL. Yes, sir.

NEW POLICY FOR USE OF NATIONAL GUARD ON THE BORDER

Mr. VISCOSKY. The next question I have, and I would ask it for the record, could you tell us what day you were informed of the new policy relative to the use of the National Guard on the border?

General LENGYEL. What day?

Mr. VISCOSKY. I don't need it now, but when were you told about this change in your responsibility on the border? Just what day. And, secondly, were you consulted and asked for your advice as to the design of this new policy before that day?

General LENGYEL. Okay.

Mr. VISCOSKY. I would be curious, were you?

General LENGYEL. I was not.

Mr. VISCOSKY. I would not ask you to go further. I would simply say that I respect your service to this country. I respect the position you have as Chief of the Reserve. And I speak only for myself, if I am going to make a change of policy, I would at least talk to you. I have no further questions.

Ms. GRANGER. Mr. Graves.

CYBER MISSION TEAMS

Mr. GRAVES. Thank you, Madam Chair.

General, good to see you again and thanks for taking care of the good people in Georgia. We have got a great team there of men and women led by Joe Jarrard, and I know you have been working hand-in-hand there, and we thank you for that.

My question is more related to the cyber mission teams and the objectives coming up, and I just want to get your thoughts and understand a little bit more about the road map and your plan to reach the full operational capability, which is scheduled for 2024.

Is the Guard's goal to stand up each of these full operational capabilities planned at one time simultaneously, all 11 teams, or is there sort of a plan to stagger that out? And maybe you could just share with us some of the challenges that you face and whether or not you are currently on track to meet some of your objectives for 2024.

General LENGYEL. Yes, sir. I think that the 11 teams will stagger over time. We will build them over time. Part of the reasons for that is the allocations of school slots that we get in order to get the folks that we need and to train them to become these cyber warriors. I think we are on track to be—my latest number is actually 2022 I think is when we thought we were going to have all 11 teams up and trained and ready to go for the National Guard.

Great examples of innovation in Georgia is standing up a cyber cell at Augusta University, and this new Cyber Center of Excellence standup there paid for by Georgia is giving the National Guard a piece in there to actually recruit some of the men and women who are going to school in the cyber field there. So I think we are on track. I think cyber continues to be a growing part of everything that we do. And in our full spectrum competition across

the globe, we are under attack every day in the cyber domain. So I think that is important.

SURGE CAPABILITY

Mr. GRAVES. Well, that is good news on the progress. And thank you for your partnership with the State, and I know the State has committed a lot of dollars to help out there. So thank you for your work with them.

And then Admiral Rogers recently described the Guard's cyber contribution as providing a surge capability.

Can you explain the specific missions where the surge capability would be used? Just give us a little—maybe what your forecast would be for the future?

General LENGYEL. So, I mean, the Army and the Air use their cyber mission forces differently. The Air Force has always two cyber mission teams on duty all the time, cyber protection teams, for a 6-month period, and then they come off and two more will go on. The Army doesn't do business that way. So the Army looks for opportunities or requirements to surge the force. Once they have all 11 cyber protection teams built and trained, as requirements dictate, they will call those forces to duty and use them.

Mr. GRAVES. Great.

General LENGYEL. As the situation dictates.

Mr. GRAVES. And then, lastly, are there any cyber missions the Guard could contribute to that are more routine and enduring in nature, as you look ahead? Anything we can help with and anything you can maybe give us a little direction on.

General LENGYEL. So, you know, every State has a cyber defensive—cyber operation team. It is a small team. Some States are experimenting with looking at how to use those teams more broadly as a State Active Duty asset that is under the command of the Governor. So some States, in preparation for election cycles, have used their cyber operations elements to actually check the security of their State dot-gov networks.

I think that there is room to grow there in the unique space that the National Guard has as a State asset as well, is to take these trained cyber folks and use them to help the State in keeping their network secure as well. So there is work going on there as well, sir.

Mr. GRAVES. Great. Well, thanks for your service, and thanks for your commitment and investment in this area, it is a very new and growing and intense theatre, I am glad you are getting engaged in it. Thank you very much, General.

General LENGYEL. Yes, sir. Thank you.

Ms. GRANGER. Ms. McCollum.

AVIATION MODERNIZATION PROGRAM

Ms. MCCOLLUM of Minnesota. Thank you, Madam Chair.

Good to see you here, General. Thank you for all you do. I am going to go from one extreme to another. I am going to talk about modernization, and then I am going to talk about recovery. They both have something in common, and that is making sure that our servicemen and women have what they need.

So I would like to get your thoughts on the Army's Aviation Modernization Program. Since the Active Component continues to lean on the Reserves as an operational force globally, I think it is important that the Guard benefit from the modernization and the aviation that is happening.

So I would like to hear your thoughts on the necessity for our Reserve Components to benefit from modernization. You talked about readiness and training, but there is also the hardware that goes with the men and women we call up to serve. So, in the fiscal year 2019 budget that addresses Army aviation modernization, I would like to know what the plan going forward is to ensure that the Guard shares in this Army modernization plan.

PUERTO RICO

And then, on recovery, as you know, Puerto Rico is still recovering from the devastation that his from Hurricane Maria last year. I was just down on the island, Madam Chair and Ranking Member, looking at recovery work that is being done by EPA, Fish and Wildlife, our National Park Service, and when driving to the park assets, I went—I drove by the National Guard.

I didn't have an opportunity—I didn't have enough time in my schedule to be in meetings with the Guard, but I did meet Guard and Reserve members who proudly serve and are very instrumental in the recovery effort. So I would like you to tell the committee what critical resources you don't have in Puerto Rico, still running on generators. Vieques is probably 4 years out from having electricity, and it is not due to the willpower of the people of Puerto Rico. It just has to do with years of neglect in working together with our territory in Puerto Rico to make sure that they had what they needed to be self-sufficient and resilient.

Puerto Rico's economy was hit really hard by the Great Recession. They haven't recovered from the hurricane yet. The next hurricane season is on the way, and they know about it. So I would like to know how the economic situation is affecting your servicemembers? Some of them are still without power, and they still have drills and things to do.

And unemployment is a significant concern. And I am wondering if you are seeing a drop in recruitment and retention because of the economy there but also because of the strain that the hurricane has really put on a lot of the people in Puerto Rico taking care of their family, their communities, and then being able to proudly serve in the Reserve and Guard Components.

General LENGYEL. Thank you, ma'am, for those questions. With respect to modernization, and aviation modernization specifically, as I said in my opening remarks that the difference with today's operational National Guard and really operational Reserve Component is we used to modernize the Active Component and cascade all the old stuff into the Reserve Component, and that is the way it worked.

That model, I would advocate, does not exist—does not work anymore. We are continuously deployed with our Active Component. We train with our Active Component. When the Active Component gives all the old stuff to the Reserve Component, it tends not to be maintained, logically supported, less deployable.

So, you know, it is that—as the Army modernizes its fleet of helicopters and tanks and everything in the Army, I advocate inside the Pentagon with the Army that they modernize the Army National Guard in a concurrent and balanced manner. Sometimes it is hard to do that, I mean, the Army is a big organization and has modernization priorities and does it, but we are getting Black Hawks—new Black Hawks, I flew in one just last weekend that had 120 hours of brand new—or Black Hawk M model. And they are modernizing some of our older ones into Victor models, and we are getting some new Chinooks as well.

I think readiness of the force and modernization of the force is important. You know, the Apaches in the Army National Guard are not manned at 24 Apaches like the Army should be. Even some of the Army battalions don't have 24 Apaches. So that makes it difficult for the Army National Guard to be as ready in the Apache business as we may need to be. Should they need to use all of our Apache battalions at once or in short order, they would not be as ready as we would want them to be because they simply don't have enough iron to be ready.

So, you know, in general, we are part of the Army's modernization plan. And when they do—for future vertical lift analysis and what is that going to look like, we have a member of the National Guard on that team, and so when they figure out what that is, we will be part of it, and my advocacy will be to modernize the National Guard in a concurrent manner with the Active Component.

With respect to Puerto Rico, I too was down there numerous times, and Hurricane Maria devastated the place, it just absolutely devastated the place, and it will be years before they are completely recovered and have done it. How long it will be before all of the people have power, I can't tell you, that is that. And there is MILCON required to repair the destroyed National Guard facilities and the like. There are still hundreds of Puerto Rico National Guard soldiers that are on Active Duty to mitigate the impacts from that disaster.

So I think that it is going to be a long time before they recover, and you know, we continue to assist them every way we can to make sure that they recover from that devastation.

Ms. McCOLLUM of Minnesota. Madam Chair, I think we should maybe ask if there is anything that this committee should be doing to support the National Guard down there. They are the first line of defense. It takes a long time to get down there. Our Park Service, Fish and Wildlife, EPA, you wouldn't believe the way that the Federal team stood up down there with doing things, but they are still running on generators, and we need to make sure before the next season that they have everything that they need at the National Guard.

Ms. GRANGER. Thank you for that. And I completely agree with you. Thank you for taking the trip to see that. I think we are sort of out of sight, out of mind on some of that, and when you hear they are on generators after this period of time, it is really significant. Mr. Diaz-Balart.

STATE PARTNERSHIP PROGRAM

Mr. DIAZ-BALART. Thank you very much, Madam Chairwoman.

General, again, thanks for your service. Let me focus on this State Partnership Program, which has been a great tool to develop relationships with our neighbors, and particular in the Western Hemisphere, Central America, South America, the Florida National Guard has partnered with the Virgin Islands, with Guyana—Guyana and others. And so it is also an important part of what—frankly, with SOUTHCOP's mission is, right? Is to develop those relationships, and I think a lot of folks don't understand your role and the National Guard's role, and it is a key role.

So just—you know, do you have the adequate funding to continue that, what I believe is a vital mission? And if you could just pretty much talk to us a little bit about what you are doing and what some of your activities are because I don't think a lot of folks know that it is the direct involvement of the National Guard. And you go down and see it—you see it. So, thank you, General.

General LENGYEL. Yes, sir. An incredibly important program. The National Guard is growing now to more than 80 partnerships; soon to be announced, several more will take us over 80. And we run the gamut from full spectrum combat operations to disaster response and civil control of the military and everything in between. Growth of our NCO corps and the NCO development of our partner nations to peacekeeping operations, humanitarian assistance operations, all of those things, and we do it all over the world.

We build what—really the product of this is trust and relationships between nations, and never more evident than across Europe as Russian aggression in Crimea and the partnerships in the Baltics and former Soviet bloc countries were absolutely instrumental in assuring our partners and allies that we were there and part of them.

More than 80 times we have had codeployments to the war where a partner nation will deploy to Afghanistan or Iraq with a codeployment with our partner nation. So it couldn't be more cost-effective. It is a very high leverage, low-cost program. The Department of Defense will spend more than \$3 billion in defense support, security cooperation.

This program right now is funded at a level from all sources at about \$16 million. And earlier I mentioned we need \$29 million to continue the level of activity, to build those meaningful relationships, and to do meaningful training across the spectrum in accordance with and under the direction of the COCOMs where these countries are, the combatant commands. Amazingly important product. Unique in the Department of Defense, really it is a thing that brings nations closer together to do things together. Thanks for the question.

SOUTHCOP

Mr. DIAZ-BALART. Thank you, General.

And, Madam Chairman, I want to thank you for—because, you know, SOUTHCOP, as I always mention, is one of those that, since there aren't a lot of public issues that come up in the hemisphere, and we kind of tend to forget about SOUTHCOP until something happens in the hemisphere. But I want to thank you, Madam Chairwoman, for always not forgetting SOUTHCOP and for your leadership there in general.

I agree with you: We may have some—even when we have some difficult relationships, the military-to-military relationship is crucial and in some cases even more crucial when we have some iffy partners, right?

General LENGYEL. Yes, sir.

Mr. DIAZ-BALART. And I just wanted to, again, I don't know if a lot of our colleagues outside of this committee know the importance not only of these programs—I think they know that—but that the National Guard is a big part of that.

So, thank you, Madam Chair, and thank you, General.

Ms. GRANGER. Thank you very much.

Thank you very much to our first panel. We are going now to Mr. Ryan and Mrs. Roby, and then we will go to the second panel.

SECURITY FORCE ASSISTANCE BRIGADES

Mr. RYAN. Great. Thank you, Madam Chair.

First, thank you so much. The European deterrence initiative is critical, and I think the more we see the level of threats that are facing our democracy here in the United States, as well as what is going on in Europe, to continue to read and dive into some of these issues, it is absolutely incredible that most Americans don't really understand the level of threat that we are under right now. So I appreciate what you are doing and what the Guard is doing.

I have a question. I know the Army plans to stand up six Security Force Assistance Brigades, the SFABs. Five are going to be Active Duty. One is going to be National Guard. Can you give us an update on that and what it is looking like from your end?

RYAN EDI FUNDING RECRUITING

General LENGYEL. Yes, sir. The single Security Force Assistance Brigade is standing up across five separate States: Indiana, Illinois, Ohio, Florida, and Georgia, I believe, are the five States. Ohio will get a share of that SFAB. And it is about 65 people, I believe. And we are, I think, on track for—I think it is—I have to get back with you on exactly when it is supposed to be up and running. It is not in my brain here right now, but I will get back with you on exactly when we expect to be up and operational, but part of that is coming to Ohio.

Mr. RYAN. Thank you. On the EDI, go over those numbers that you mentioned again when Mr. Diaz-Balart was talking—asking you. How much money goes to the Guard for EDI?

General LENGYEL. EDI is different than SPP.

EUROPEAN DETERRENCE INITIATIVE (EDI)

Mr. RYAN. I know, I am going backwards.

General LENGYEL. Right. I would have to go look. We have lots of National Guard forces who are mobilizing into Europe with European—

Mr. RYAN. The EDI?

General LENGYEL. Yes. I can't give you that number here, I would have to go figure it out.

RECRUITING AND RETENTION

Mr. RYAN. Okay. I just want to see a comparison of the two, so we will get that. On the issue of the recruiting and retention, one of the issues that keeps becoming an issue, has been an issue, is the issue of fitness and the ability to recruit.

Can you talk to us a little bit about meeting the standards and any changes you may have seen over the past few years for our inability to kind of meet some of these numbers because of the fitness goals aren't being met?

General LENGYEL. Yes, sir. I mean, just, in general, across America, there tends to be a less fit general younger population than there once was. Fitness standards to be in the military are, you know, they are what they need to be. So it is getting harder for not just the Army National Guard or Air National Guard to find people that meet recruiting standards—and it is not just fitness; it is across the spectrum of education and suitability and the like.

So, this year, I would offer that the National Guard, the Army National Guard, may actually not meet our end strength at the end of the year that we had at 343,500. We are going to struggle to meet that total number. For the past 5 years, the National Guard has failed to meet our recruiting goals of how many people. We met end strength because we were able to retain more of the current force.

Mr. RYAN. Right.

General LENGYEL. But I think we are going to see that as more broadly a problem that would require changes to how we market, changes perhaps even in increased resources, to how we market more recruiters. Different approaches to try to get people to fill our ranks.

Mr. RYAN. Thank you.

Madam Chairman, I just think this is a broader discussion that we need to have because this is an issue that keeps coming up, keeps coming up. The demands are greater. And I don't know if we need to do some kind of national initiative led by the military about general health, but it is—it has really diminished our ability to recruit the kind of soldier and airman and seaman that we need.

And, again, we get locked in these little silos of it is a defense problem; it is also a societal problem, and the two interface with each other every single day. So that may be part of a broader conversation we need to have.

I yield back.

Ms. GRANGER. Thank you.

The good news and the bad news, General Lengyel, is there is lots of the interest in what you are in charge of; the bad news is you get to come back.

So Mrs. Roby.

F-35S

Mrs. ROBY. Thank you, Madam Chairman.

And thank you, General, for being here, and as always, we appreciate your service to our country and that of your family as well, and for all of the guardsmen and women that you represent all across our country.

As you are aware, we discussed this yesterday. We, in Alabama, are very, very excited about the Air Force's decision to field the F-35s at Dannelly Field for the men and women of the 187th. It is a fighter wing. We are very proud of their capability. We know, at the end of the day, it was those men and women that contributed to that decision. Of course, the red tails also have a storied combat record, and the River Region is extremely proud and supportive of our Air Force and our Air National Guard.

I just thought this would be a good opportunity for you to provide us an update as it relates the F-35 rollout, maybe a more definitive timeline as you see it as it relates to these Guard units that have just been given the opportunity to field that mission.

General LENGYEL. Yes, ma'am. Well, congratulations to Alabama. I wish I could take credit for that, but the Air Force has a very defined process which analyzes basing criteria, and, you know, Dannelly Field came out in appropriate manner at the top of that process for Air Force. I believe that, you know, there is no change from what you have heard before that I am able to really update you. I think that 2024, is that the timeframe that—

Mrs. ROBY. 2023 is what we were told the aircraft might arrive.

General LENGYEL. To my knowledge, that has not changed for Alabama. But if it has changed, I will look into it and provide you an update immediately if anything changes.

PILOT SHORTAGES

Mrs. ROBY. Well, we appreciate that. And, again, look forward to continuing that conversation. But, again, just on behalf of the men and women of the 187th, we are all very thrilled.

One of the things that comes up in all of our discussions across all of our militarywide is the issue of the pilot shortages. I don't know if you have already addressed this. I apologize; I came in late. But I just would like for you to tell us, from your perspective, as it relates to the National Guard, how you are being affected by pilot shortages. And then really provide us, if you can, and maybe not at this time, but any opportunities that you see on the policy side how we can be helpful on that front?

General LENGYEL. Yes, the nationwide issue with regard to having the number of pilots that our Nation needs both in the commercial sector and in the military is impacting the National Guard. It is not impacting us as much as it is impacting the Active Component. The good news for the Reserve Component is you can be both an airline pilot and a military pilot.

With respect to how our individual units are done, I would say that our total pilots we are short about 15 percent of what we need. In general, and these are broad terms, I can get you exact terms if you wish, but in broad terms, we are actually able to maintain and recruit all of our part-time force. We have a lot of people who are leaving the military, want to stay involved in military aviation, so, in many cases, not in all, there are some areas where that is not true, but broadly, we are able to keep the part-time force.

Where we are having trouble keeping people is qualified instructor pilots, the full-time force, who actually want to be—for the full-time people, more specifically, it is the technician full-time force that is very, very hard to retain. We simply can't pay them enough.

People tend to want—if they are going to be full time, they want the opportunity to retire after 20 years of service, and perhaps have a follow-on military career. So that particular aspect of our full-time force is harder to keep.

The Active Guard Reserve slots in the full time, there are many people in the Active Component who decide that they don't want to move as much anymore, but they don't want to be an airline pilot, so they will move and live in Montgomery, Alabama, and be a full-time pilot in the 187th fighter wing, just like similar status of Active Duty Air Force and retire at 20 years and keep the benefits and the like.

So, if there as policy issue that could help us, it would be to help us increase the Active Guard Reserve billets versus the technician billets across the force. In general, I think as our force is migrating towards this operational force, you will see a request from us. In fact, we submitted a report through OSD to Congress on the analysis of our full-time force. You will see us move more towards a request for an Active Guard Reserve force, I think, as opposed to a technician full-time force. We still see that as a valued resource in some ways, but over time, that will be something we may ask you for.

Mrs. ROBY. Well, again, thank you for your service. We appreciate you being here today.

And I yield back.

General LENGYEL. Thank you.

Ms. GRANGER. Mr. Womack.

RECRUITING AND RETENTION

Mr. WOMACK. Thank you, Madam Chair.

I apologize for being here late. As I told the distinguished chair here that chairing the House Budget Committee is just jerking all my time away from me, and I miss sitting here on this dais engaging in military discussions. So I want to associate myself with the remarks of my friend Tim Ryan over here about medical fitness. I encountered that as a commander. Medical fitness is a critical problem across the spectrum of society but certainly with regard to the military because we have certain standards that we have got to have. And if they don't have them, we can't take them.

I want to ask you a question about retention—recruiting and retention. It is my belief that, as our National Guard and Reserve Components are utilized more and more in our national defense posture, and I know General Kadavy has talked about the Guard 4.0 or whatever his term is for it.

General LENGYEL. Yes.

Mr. WOMACK. And the notion that we need to increase the training days available to a lot of the people, particularly those going into the box, that sort of thing. I get all of that. There has got to be a sweet spot in there somewhere though, with our employer support to the Guard and Reserve, with our families. We are talking about recruiting problems right now and not being able to meet mission. I would guess that improved economic conditions in this country are causing people to have better jobs, and the need to be in the part-time military may not be as attractive as it once was.

So do you have those concerns about the other elements of society that have an impact on our ability to recruit and retain people into our Guard structure?

General LENGYEL. Yes, sir. I do have those concerns. You know, the demand on the part-time force and, you know, that the Reserve Component brings an immense amount of combat capability to the Department of Defense at a lower cost because we don't get paid when we are not being used, and that is value in that. As long as we keep them ready and then they are properly equipped, then they can go to war and provide combat capacity when we need it.

I think that General Kadavy is spot on. The Army National Guard is different now than when you or I was actually a young officer in the military. There is more exception to be used. We have a different force, though, the force that has gotten into the National Guard expects to be deployed; they want to be deployed. They are willing to train 45, 50, 60 days a year, provided it is predictable, provided that when they do train that, at the end of that, there is a meaningful reason why to deploy them. So, whether they deploy to the Sinai or whether they deploy to Bosnia or Kosovo or whether they employ to ERI in Europe or to Pacific Pathways in the Pacific, there is a reason for the employer to see that this soldier or airman is actually contributing to the national defense. There is a sweet spot in there where we will break it. And if we get past the point where the employers don't support our members, and right now—I had met with the president of ESGR 2 weeks ago, and while there are pockets of people where employers are getting weary, overall, we still broadly have great support from our employers.

So it is incumbent on us to be predictable when we can and let people see the meaningful impact that this work does for the national defense of the United States.

PILOT SHORTAGE

Mr. WOMACK. There was some discussion about pilot shortage, and I want to be careful I don't run out of time here. Have you considered this title 32, title 5 exchange program—I guess it is what—I don't know what the percentage is of the mix, but have you considered using any of the personnel that could be used in that title 5 force mix as an enhancement to addressing some of this pilot shortage?

General LENGYEL. So, sir, I don't—in the National Guard case, we don't see the title 5 as a good resource to put as our aviators, our combat-coded unit type codes that actually deploy and go to war. We see the best use of title 5 resource in the National Guard case as those that don't necessarily have deployed operational requirements to go do. So I don't see the title 5 resource helping us in that regard with respect to the title 5 issue.

COMBAT AVIATION

Mr. WOMACK. And then, finally, a question about combat aviation. We have had a long discussion about it over the last several years. So where are we on making sure that we continue to have at least that force mix in the Reserve Component?

General LENGYEL. So, in accordance with the National Commission on the Future of the Army, we have stationed now at long last the four Apache battalions that are in the Army National Guard. They went to North Carolina, South Carolina, Utah, and then they split between Texas and Mississippi. That is where they are. The stationing decision has been made.

Also, in that same report, it said: Hey, you are going to have 18 Apaches in each one of those battalions. And a little bit later in the report it said: Hey, if there is—an opportunity presents itself, you should find a way to plus these up to 24 Apaches per battalion.

And where we are right now is, right now, as we deploy a battalion, we are scraping from the other three battalions iron to make sure that they are ready to go and have their full complement of aircraft. So it is challenging. Should we ever have to deploy more than one at a time, it could be challenging to the mission.

Mr. WOMACK. Before I yield back, were you happy with NGREA in this last omni?

General LENGYEL. Thank you for NGREA. \$420 million in each Army and Air was substantial. Thank you very much to the entire committee.

Mr. WOMACK. Thank you for your service.
I yield back.

Ms. GRANGER. Thank you. We will have a closing comment from Mr. Visclosky, and then panel 2 will prepare to take over.

Mr. VISCLOSKY. Thank you, Madam Chair. I would ask for the record, because I know we have to go, in followup to Mr. Womack's question, and again, this would be for the record. How many complaints or actions have the employers for Guard and Reserve dealt with for employers not working with guardsmen and deployment?

Mr. VISCLOSKY. And the last observation I would make, as a former seminarian, I would quote one sentence from another former seminarian, the Governor of California in his letter of yesterday, where he said: I agree with the Catholic bishops who have said that the local, State, and Federal officials should work collaboratively and prudently in the implementation of this deployment—talking about the border—ensuring that the presence that the National Guard is measured and not disruptive to community life.

General, I do have a profound respect for you, and I know that is how you will conduct yourself, and you will ask the Guard to conduct themselves, and I thank you for that.

Thank you, Madam Chair.

Ms. GRANGER. This concludes panel 1.

Thank you, General Lengyel, for your attention here and what you are doing here.

General LENGYEL. Thank you, Chairwoman.

THURSDAY, APRIL 12, 2018.

FY 2019 RESERVE COMPONENTS

WITNESSES

LIEUTENANT GENERAL CHARLES LUCKEY, CHIEF OF ARMY RESERVE
VICE ADMIRAL LUKE MCCOLLUM, CHIEF OF THE NAVY RESERVE
LIEUTENANT GENERAL REX MCMILLIAN, COMMANDER, MARINE
FORCES RESERVE
LIEUTENANT GENERAL MARYANNE MILLER, CHIEF OF THE AIR
FORCE RESERVE

OPENING STATEMENT OF CHAIRMAN GRANGER

Ms. GRANGER. We will now move to panel 2, and they will be introduced.

If you will be seated, we will begin. Our witnesses for panel 2 are Lieutenant General Charles D. Luckey, Chief Army Reserve; Vice Admiral Luke M. McCollum, Chief of Navy Reserve; Lieutenant General Rex C. McMillian, Commander Marine Reserve; Lieutenant General Maryanne Miller, Chief of Air Force Reserves.

Welcome to all of you here. We appreciate it very much.

We appreciate your being able to share your information.

General Miller, in panel 1, the committee noted the recent death of two Air Force reservists who died on March 15th when their helicopter crashed in western Iraq. The committee recognizes the sacrifices that these two reservists, the Active Air Force officer, and four air guardsmen who also perished in this crash. Please express our deepest sympathy to the families.

We look forward to your testimony and responses. And because of our limited time, please make your opening statements as brief as possible.

And we will ask for the members of the subcommittee, we will limit your questions and the answer complete to 4 minutes. And you will see there will be lights. Green means they will start speaking. When it goes to yellow, it means you have 1 minute left, and then to red.

General Luckey, we will start with you.

SUMMARY STATEMENT OF GENERAL LUCKEY

General LUCKEY. So, Chairwoman Granger and Ranking Member Visclosky, it is an honor to be back here with you. It has been about a year. In the interest of time, I am not going to go through my prepared remarks. Out of courtesy to the committee, I would rather answer questions as appropriate for the committee.

I would just like to say, for all the distinguished members who are here, how much I appreciate the support of this committee and the House of Representatives and the Senate as well, for the support over the last year for America's Army Reserve. I want to specifically highlight the NGREA funding that we received last year and give this committee and the Congress of the United States a high level of assurance that that money is being put to extraordinarily good use, to include modernizing some systems. We purchased some JLTVs, which we will be getting in the fall. And as you well know, that is a new capability for the Army, and it is a

capability that the Army Reserve needs to start training on. So we have done that.

We are also using that funding and we will continue to look to use that funding to help us build more resilience. Candidly, I have learned a lot over the last year, particularly in response to the situations both in Puerto Rico and the Virgin Islands, Florida, and Texas, as it pertains to Harvey, Irma, and Maria. So, again, we are using that money wisely and prudently, but also it gives me tremendous flexibility operationally. I appreciate it very much. I appreciate your continued support.

Just very quickly, just to update you, our Ready Force X, RFX constructs, is coming along well. I am happy to answer any questions the committee has about how that is going, the balance between readiness and the force, but also stress on the force. And I would also acknowledge that, as I said last year, I need the committee's continued support in messaging the messengers in America, using your voice to influence those influencers out there, and encouraging them to continue to remain in a partnership with America's Army Reserve as it pertains to sharing the best talent in America. So I am talking to employers, whether it be in academia, private sector, public sector, employers that are continuing to assure their talent with us on behalf of the national security of the United States of America.

And last, but not least, by any means, thanks again for the committee's support and continued concern about our families, who, as we all know, support this team day in and day out. In fact, as soon as I leave here today, I will be going to Fort Leavenworth, Kansas, this afternoon, to the talk to the pre-command course and then on to Minneapolis-St. Paul to talk with the team leaders that support our family support programs and making sure they are getting support and schooling that they need. And my wife, Julie, will be joining me on that trip as well to support them. So, again, I appreciate your support. I look forward to your questions, and I yield the rest of my time.

[The written statement of General Luckey follows:]

The 2018 Posture of the United States Army Reserve,
America's Global Operational Reserve Force

Submitted by

LIEUTENANT GENERAL CHARLES D. LUCKEY

33d Chief of Army Reserve and

8th Commanding General, U.S. Army Reserve Command

April 12, 2018

House Appropriations Committee-Defense Hearing

**NOT FOR PUBLICATION UNTIL RELEASED BY THE HOUSE
APPROPRIATIONS COMMITTEE**

Title 10 USC specifies the Chief of Army Reserve shall submit to the Secretary of Defense, through the Secretary of the Army, an annual report on the state of the Army Reserve and the ability of the Army Reserve to meet its missions. The report shall be prepared in conjunction with the Chief of Staff of the Army and may be submitted in classified and unclassified versions.

INTRODUCTION
Ready Now; Shaping Tomorrow

Throughout its 110-year history, America's Army Reserve has always met the challenges of the time. Leveraging its broad and pervasive presence on, and connections with, Main Street America, the Army Reserve has consistently demonstrated its ability to build and sustain readiness, and provide unique and critical capabilities to the Army and the Combatant Commands at a massive cost-savings to the American people. These times are no different.

As the Army's sole, dedicated Federal reserve force, America's Army Reserve has been preparing and posturing its forces to respond quickly to evolving threats from multiple sources. In 2016, we embarked upon an effort to significantly increase the readiness of our forces and close interoperability gaps with the Joint Force. Today, some 30 percent of Army Reserve units are charged with maintaining higher levels of peacetime readiness to reduce post-mobilization training time, and both risk-to-mission and risk-to-force, in the event of war.

These units, organized into the construct of Ready Force X (RFX), are pre-identified based on contingency plans, to mobilize and deploy on short timelines as part of critical "Fight Fast" formations. Some RFX units will provide unique and essential early-entry and set-theater capabilities to support Army requirements in contested environments across multiple domains. Others are tailored to support Army efforts to rapidly expand the critical mobilization platforms needed to generate the deployment through-put as needed on behalf of the American people. Still others provide operational depth, acknowledging that hostilities in one theater may tempt other competitors to become opportunistically adventurous in another. All these forces are being methodically identified, prioritized, trained and postured to move fast, engage quickly and win decisively on the battlefield of today.

This urgent press to build sufficient readiness to meet the demands of a large and sudden contingency operation, driven by this new threat paradigm we face today, has the potential to increase stress on our Army Reserve Soldiers, families and employers. We acknowledge and accept the daunting challenge it creates, which is to be ready enough to be relevant, but not so ready that our Soldiers cannot keep superb civilian employment and maintain healthy, rewarding and balanced lives with their families.

This is no small order, but this is no ordinary team. A combination of engaged leadership, a realigned and dynamic command and control structure, a reformed and innovative training strategy, and enhanced time-management flexibility for junior commanders at echelon, will help mitigate increased pressure on the Soldier. We are also

re-tasking and redesigning our Family Support Program to include regionally-oriented, organically-nurtured programs that support the family. Finally, the Army Reserve will continue its persistent engagement with influencers and employers across America to reinforce the strategic partnership between Main Street and America's Army Reserve to employ the Nation's best talent in support of the American people.

Looking to tomorrow, your Army Reserve will continue to assess, innovate, and shape as we lean into the future. Our aggressive initiative to anticipate and be informed by emerging demographic trends in the United States, will enable us to integrate, scale and — where necessary — realign force structure and facilities to better recruit and retain critical talent for the Army by being well-positioned to meet and support our Soldiers where they live and work.

Leveraging new systems and policies, America's Army Reserve will explore and, where appropriate, operationalize innovative ways to attract, "hire" and leverage the rapidly developing "digital talent" that exists in the private sector for the good of the Army and the Nation. In short, we will do more than prepare for tomorrow; we will shape it.

Ready Now, Shaping Tomorrow is not just a slogan. America's Army Reserve — capable, combat-ready and lethal — is ready to fight fast today, and innovate for tomorrow, in support of the Army's mission to fight, survive and win the Nation's wars.

THE STATE OF THE ARMY RESERVE

With a presence in all 50 States, five U.S. territories, and 30 countries across the globe, America's Army Reserve provides operational capability and strategic depth to the Army and the Joint Force in support of U.S. national security interests and Army commitments worldwide.

The Army Reserve comprises nearly 20 percent of the Army's organized units, almost half its total maneuver support, and a quarter of its mobilization base-expansion capacity. Its unique status as both a component of the Army and a singular Command imbues it with the flexibility, agility and unity of effort needed to respond to any mission at home or abroad, often with little notice.

Manned, trained and equipped primarily to enable combat formations, the Army Reserve provides quick access to trained and ready Soldiers and units, and the critical enabling and sustaining capabilities the Army needs to win. These include key strategic and operational capabilities such as Petroleum Pipeline and Terminal Operations, Rail Units, Biological Identification Detachments, Broadcast Operations, Civil Affairs and Psychological Operations, a variety of Military Police capabilities, Military Intelligence, Horizontal and Vertical Construction, as well as Combat Engineers, Assault Aviation, Logistics, and an array of Medical Commands and formations.

Engaged globally, the Army Reserve plays an integral role in America's national defense architecture, meeting high operational tempo demands, generating forces as required, and providing reliable capabilities to all Combatant Commands.

Since 2001, more than 310,000 Army Reserve Soldiers have been mobilized and deployed to Iraq and Afghanistan, as well as Theater Security Cooperation, Foreign Humanitarian Assistance and Disaster Relief, Homeland Defense, Defense Support of Civil Authorities, and other missions at home and around the world.

Today, nearly 15,000 Army Reserve Soldiers are supporting global combatant command operations to include Civil Affairs missions in the Horn of Africa, deterrence operations in Kuwait, Military Police operations at Guantanamo Bay, Cuba, and Medical Support operations in Honduras.

Without doubt, today's Army Reserve is the most combat-tested and experienced force in its history, but to remain ready to win in an environment that grows daily in lethality and complexity, we must build the most capable, combat-ready, and lethal Federal reserve force in the Nation's history.

MEETING THE NEW THREAT PARADIGM

The emerging threat paradigm is characterized by extraordinarily capable potential adversaries who could contest and disrupt U.S. military operations across all domains – land, air, sea, space and cyberspace. This potential reality expands the modern battlefield beyond anything we have known in terms of tempo, lethality, and operational and strategic reach. Our ability to match and outpace potential adversaries is essential to ensuring freedom of maneuver, while also strengthening our deterrence posture and assessing the resolve and capability of key global allies.

The commanding lead in technical innovation, once enjoyed by the US military, is now subject to challenge by emerging competitors. Moreover, the fast pace of change in the private sector – in areas of quantum computing, artificial intelligence, robotics, computer & materials science, medicine, and genetic research and engineering, to name a few – has, in the main, been driven by profit-motivated markets that can, in many cases, be characterized by regions, communities or, in some cases, specific corporate entities. This pace has accelerated to the point where private/public partnerships are, arguably, an essential element of National Security.

In this evolving global security environment in which both U.S. technological supremacy and vital national interests are subject to challenge by states who potentially possess both the means and proclivity to challenge U.S. dominance in critical areas and non-state actors who may acquire capabilities to acutely challenge our forces for discrete attacks, the mandate is clear: increase the readiness of Army Reserve forces – primarily units with a bias for action – in order to enable them to deploy and engage on short notice. This focus on readiness, of both individual Soldiers and action oriented units, drives the Army Reserve's strategy for manning, training, and equipping its "Fight Fast" formations and adds credence to the Nation's deterrence posture.

Readiness is our first priority, and full-spectrum threats demand full-spectrum readiness. In addition to sustaining the counter-insurgency and counterterrorism capabilities we have developed, the Army Reserve must be ready to respond to evolving threats in several theaters, and be prepared for the warfighting demands of large-scale, nearly simultaneous contingencies in more than one of them. Should they materialize, these contingencies would require significant and rapid mobilization, and require lead formations from America's Army

Reserve to provide technical enabling capabilities crucial to opening, synchronizing, and sustaining major operations.

In this new threat paradigm, the time-tested model of rotational readiness will no longer suffice. Our traditional "patch chart" approach will not generate the significant surge capacity that such contingencies – arising quickly with little strategic indications and warning – will demand. To that end, the Army Reserve must now focus its training, equipping and manning priorities to meet the challenge of generating full-spectrum readiness for a Ready Force of tens of thousands of Soldiers who can deploy to the fight in a matter of days and weeks. This work includes having sufficient critical Army Reserve enabler capabilities and ensuring there are no interoperability gaps in areas such as mobility, lethality, battlefield communications and mission command systems.

Ready Force X

In an environment in which the rapid mobilization and deployment of lead formations is critical to massing and sustaining combat power, the Army relies upon the fundamentally integrated and unique capabilities of America's Army Reserve to fight and win. To that end, as noted earlier, your Army Reserve has continued to refine and develop Ready Force X (RFX) as the driving force for all aspects of manning, equipping, training, and deploying key capabilities on the compressed timelines that certain contingencies mandate. While this remains a work in progress, much advancement has been made.

RFX units will have the ability to deploy rapidly – in some cases days or weeks – with the mobility, survivability, lethality and netted mission command architecture to synchronize with the Total Force and win on the battlefield. While RFX units may be missioned, primarily, with an eye towards one contingency, their key organizing aspects are readiness and agility. Put simply, they must be ready to "Fight Fast." Whether it be opening ports, setting the theater with critical enablers, constituting and operating mobilization support platforms for the Total Force, or supporting maneuver forces in contact with the enemy, RFX units need to be ready to move quickly to a wide-variety of contingencies.

RFX units comprise critically integrated capabilities for the Army. In some instances they consist of capabilities that are unique to America's Army Reserve and have, essentially, no analogue in either the Active Army or the National Guard. Key aspects of petroleum distribution, rail operations, theater-level engineer and aviation operations, civil affairs, and psychological operations are but a few examples of such formations. In other cases, they are capabilities that, while not exclusively the province of the Army Reserve — critical medical units, a wide array of sustainment capabilities, and multiple maneuver support formations to list but a few — form a large percentage of the Army's total capacity and are likely to be needed

on compressed timeliness. These requirements drive the mandate: certain units must be able to achieve a high degree of pre-mobilization readiness and sustain it over time. Readiness begins with the individual American Soldier. Fit, medically-ready, appropriately trained, and conditioned, the deployable Soldier is the foundational element of capability. Upon this foundation we build the collective capability of units-of-action that are manned, trained, equipped and — above all — led to genuine combat-readiness. In RFX formations, this effort requires, in addition to motivated and committed leadership, persistent energy and a dogged determination to focus on those mission-critical tasks that must be accomplished now since there will be little to no time upon mobilization.

At the core, RFX is two things. First, it is a way of prioritizing activities and focusing decision-making — personnel policies, training schedules, equipping timelines, modernization priorities, etc. — with a view towards those things that must be done quickly in the event of a contingency or surge requirement. Second, it is a lens that forces commanders to access, in conjunction with a potential wartime requirement, the amount of time they will need to prepare their unit for combat, but also to view that assessment considering when the Combatant Command has determined that the capability will be needed, in the battle-space, and fully mission capable. That lens is what enables leadership to see the risk of not being ready to "Fight Fast," because it bounds the problem and clarifies the risk.

RFX is not a rotational-readiness construct. Units in it, to include early-entry/set-theater capabilities, and other formations meeting specific Combatant Command requirements, will be appropriately manned, trained, equipped, and maintained in place until further notice to enhance stability within the force and enable the Army Reserve to build and sustain individual and collective readiness. Leveraging the Army's Sustainable Readiness strategy, strategic depth units will remain sized, trained, and postured, as required, to protect the Nation and its interests, to include Homeland Defense and Defense Support of Civil Authorities (DSCA).

Homeland Defense and Defense Support of Civil Authorities

With Soldiers and equipment in more than 1,100 communities across the Nation, America's Army Reserve is uniquely postured to employ capabilities critical to Homeland Defense and DSCA. These include search and rescue, aviation, engineer, transportation, medical, water and fuel distribution, water purification and communications support.

Operating under Title 10 of the U.S. Code, America's Army Reserve supports local, state and federal agencies as part of the synchronized federal response force coordinated by the Federal Emergency Management Agency that fills the capability gaps of Civil Authorities, conducting operations to save lives, prevent human suffering and mitigate property damage. Operating under the guidelines of the National Response Framework (NRF), and in

compliance with the National Incident Management System (NIMS), America's Army Reserve provides an immediate and deliberate response in support of the American people at their time of greatest need. As with their brothers and sisters in the Army Guard, Army Reserve Soldiers live and work in local communities across the country and around the world, and they stand ready to support on no-notice.

Over the past year, in anticipation of Hurricane Harvey's landfall, your Army Reserve prepared and positioned capabilities to be ready to support on a moment's notice, and then — pursuant to Immediate Response Authority (IRA) — executed dozens of missions to rescue and evacuate well over 4,000 people, transport emergency responders, and airlift life-saving medical supplies throughout the greater Houston metroplex. Similarly, your Army Reserve Soldiers provided massive IRA support in the aftermath of Hurricanes Irma and Maria, providing key port-opening capabilities, road clearance operations, water and fuel distribution, and water purification operations in support of thousands of devastated survivors.

More than 2,000 Army Reserve Soldiers from the Puerto Rico-based 1st Mission Support Command and other Reserve units on Puerto Rico and the U.S. Virgin Islands responded to local and federal requests for assistance. Placed under the unified command of an Army Reserve Brigadier General immediately after Hurricane Irma struck, these units provided critical and orchestrated capabilities setting the stage for operations after Maria's devastating blow. These operations included movement of life-saving commodities, mortuary affairs, power restoration, opening of roadways, support of the U.S. Coast Guard in opening the Port of San Juan, and enabling additional support to the Federal Government's effort to assist the Commonwealth and the Territory. Your Army Reserve Soldiers, living in Puerto Rico and the Virgin Islands, cleared access corridors to hospitals and positioned civil affairs capabilities to better orchestrate medical support to local civilians.

Water purification units, like the 973rd Quartermaster Company, provided more than 12,500 gallons of safe water per day to people who had no access to potable water. Army Reserve Convoys transported pallet-loads of bottled water, thousands of meals, and gallons of freshly purified bulk water, and distributed well over 100,000 gallons of fuel in support of local authorities.

Twenty-one personnel from Delta Company, 249th Engineer Battalion (Prime Power), were on the ground in Puerto Rico repairing distribution lines. Delta Company, the only Army unit comprised solely of linemen, placed an average of 10 power poles per day, and repaired more than 52,800 feet of distribution lines, connecting over 3,500 clients to the power grid.

America's Army Reserve fields a significant portion of the Nation's chemical and biological agent defense capabilities, many of which are fully integrated into the standing Department of Defense Chemical, Biological, Radiological and Nuclear (CBRN) Response Enterprise An

Army Reserve mission force comprised of units assigned to the CBRN Command and Control Element conducts critical enabling tasks for CBRN response operations in support of if called upon, these highly trained Soldiers support civil authorities to save lives, minimize human suffering, maintain public confidence, and mitigate the effects of CBRN incidents.

Leveraging the Civilian Skills

Many of America's Army Reserve Soldiers have years of civilian experience and industry-specific knowledge, expertise and skills in cyber, artificial intelligence, quantum computing and other advanced-technology fields. Your Army Reserve has already moved rapidly and decisively to position force structure across the United States to assess and develop "digital key terrain". Intended, broadly, to both better understand the rapidly developing technologies in the private sector of the global economy and to exploit the Army Reserve's unique ability to leverage its pervasive presence in that sector to bring additional capability to the Army, this initiative is well underway. Working closely with partners in both the public and private sectors, your Army Reserve is playing to its strength - finding some of the best talent in America and weaving it into the National Security fabric of America.

We will continue to explore and exploit opportunities to draw upon our civilian-acquired or civilian-retained skills, and to leverage our relationships with industry and academia, while also capitalizing on evolving demographic shifts in the population. But one example from an operational perspective: Army Reserve cyber Soldiers support a myriad of missions to include cyber protection of critical infrastructure networks. Army Reserve Cyber Operations Group Soldiers are employed by more than 30 government agencies and contractors, including the Department of Homeland Security, the National Security Agency, the Federal Bureau of Investigation, the Defense Intelligence Agency and more than 40 corporate, financial and academic institutions, such as Uber, Google, IBM, MIT, Carnegie Mellon University and the Naval Post Graduate School. This is but the beginning.

Families and Employers

Readiness is built and sustained by garnering and retaining the support of both our families and, for America's Army Reserve, the employers who enable us to serve the Army and the Nation. The reason for this is as simple as it is self-evident: in a Nation that depends upon an all-volunteer force for its survival, if you are unable to hold the support of our families and fellow citizens, you do not have an Army. Families who feel embraced, appreciated, and integrated into the Army Reserve are our key enablers. Similarly, the unwavering support of employers for Army Reserve Soldiers often determines their ability to continue to serve the people of the United States as an American Soldier.

Translated into action, this reality requires a coherent and integrated approach whereby a variety of Family Support programs and initiatives are leveraged to support Families and sustain a sense of community and mutual support in spite of the geographic dispersion of our units and Soldiers who are spread around the world. Sustaining employer support becomes an even more complex and demanding challenge when seen in the context of the Army's appropriate reliance upon the Army Reserve to generate the requisite combat power the nation requires. Persistent and persuasive engagement with employers and the communities in which they reside, through a variety of outreach tools, is the key to reminding American businesses of the essential linkage between their patriotism and national security. We cannot, and will not, throttle back on this effort. Our U.S. Army Reserve Ambassadors, Public-Private Partnership Program and community support initiatives at the local level are all critical enablers in this push.

By way of example, the Army Reserve maintains an around-the-clock capability to support our Soldiers and Families. The Fort Family Outreach and Support Center at Fort Bragg, North Carolina, provides a direct conduit to command and community resources with comprehensive and confidential information, assistance, and referrals for every aspect of military life. Moreover, the Army Reserve Volunteer Program promotes and strengthens volunteerism by uniting community volunteer efforts, enhancing volunteer career mobility, and establishing volunteer partnerships.

Our Survivor Outreach Services Program maintains a family's connection with the Army family in times of loss, regardless of a fallen member's duty status or component. Child and Youth Services helps geographically dispersed Soldiers and families find affordable childcare and youth supervision options within local communities. Army Family Team Building is a readiness training program to educate Army Families about military life. These and other Family Readiness programs support more than a quarter of a million dependents in America's Army Reserve. They are initiatives that have proven themselves effective repeatedly.

Our Private Public Partnership (P3) program directly serves to meet the demand signal of attracting and retaining talent. Within the P3 program, America's Army Reserve develops, integrates, and fosters relationships between Army Reserve Soldiers and private and public-sector organizations. P3 has established an extensive network of partners that include not-for-profit and for-profit organizations and has helped establish veteran specific employment initiatives through a teamwork approach with employers – a win for both teams.

Suicide Prevention

In America's Army Reserve, suicide prevention is the shared responsibility of commanders, leaders, Soldiers, Family members, and Army civilians at all levels and our efforts are a key component to personal unit readiness. Ensuring prompt access to quality care is an essential component of suicide prevention but we must also reduce risk, and one of the

greatest risks is stigma. In the Army Reserve, we are working to eliminate the stigma associated with seeking help for suicidal thoughts or feelings, and are working to provide supportive environments for those with emotional and psychological issues.

The Army Reserve is diligent in raising awareness of the many tools and resources available to increase individual resiliency and eliminate the incidences of suicide. For example, Military OneSource provides free financial counselors for military members facing serious financial issues – a key suicide risk factor. The Comprehensive Soldier Fitness (CSF) Program helps Soldiers learn resiliency and have the tools to grow through demanding experiences. The Army Reserve's Fort Family Outreach Support Center (1-866-345-8248) provides assistance for Soldiers and Families in need. The Army Reserve is unleashing the power of the team to take care of our teammates and eliminate suicides within our team.

Sexual Harassment and Assault Prevention

There is no place for sexual harassment and assault in the Army Reserve. America's Army Reserve is a family, a close-knit team. Sexual harassment and assault is an attack on our team, and it is not tolerated. Just as we would not let anyone hurt our immediate family members, we will not let anyone harm a member of our Army Reserve team and our unit readiness.

The leaders at all echelons of the Army Reserve are the shields of trust for each Soldier. We must have high levels of mutual trust to get after those who would break that bond. As the shields to our team, the entirety of the Army Reserve is committed to 1) Protect victims, provide compassionate care, protect their rights and privacy, and prevent sexual assaults from occurring in the first place; 2) Report every allegation, ensure they are thoroughly and professionally investigated, and take appropriate action based on the results of those investigations; 3) Create a positive command climate and an environment of trust and respect in which every person can thrive and achieve their full potential; 4) Hold individuals, units, Commanders and leaders responsible for their actions or inactions; 5) Fully engage the chain of command, and hold it accountable for everything that goes on in the unit. America's Army Reserve is fully committed to eradicating instances of harassment and sexual assault, caring for the victims, and holding those who commit such egregious acts accountable.

SHAPE AND GROW THE FUTURE FORCE

Staying current with force structure changes, unit positioning, leader development, and leveraging emerging technologies, capabilities and opportunities are key aspects of the agility the Army Reserve will use to shape and grow the future force. The positioning of force structure, units and capabilities is a vital part of developing tomorrow's Army Reserve. Building for the future means ensuring that America's Army Reserve not only anticipates and

flexes to meet new and emerging force structure requirements, but that ready units are positioned where future Soldiers are living and working in their chosen fields. Aligning force structure and unit locations with trending demographics will also help overcome perennial recruiting and retention challenges.

Developing agile leaders who can thrive in a full spectrum environment, are capable of making hard decisions under stress, and can operate in a complex and potentially digitally-disrupted or austere environment is a key component of our strategy to shape and grow the future force.

The Army Reserve's deep connection to the private sector is a substantial advantage in understanding and exploiting cutting-edge technology advances and capabilities, such as those in the cyber domain. For example, we are already positioning structure to support high tech-focused Department of Defense (DoD) initiatives leveraging "digital key terrain" in select locations in the United States, and seizing on further opportunities to draw upon our civilian skills and relationships with the private sector to meet critical needs of the Army.

Finally, infrastructure is also a critical component of generating readiness. No one installation is ideally suited to providing first-class training to all formations at all times of the year. Training platforms – their location, capabilities, and limitations – must be assessed and leveraged in a manner that optimizes their ability to provide relevant, combat focused training experiences for Army Reserve units, and maximizes their ability to increase the combat-readiness of discrete, capable units in the minimum time possible.

Resourcing and Sequestration

Consistent funding is critical to ensuring that America's Army Reserve can meet the needs of the Army and Combatant Commands across the range of military options. We are grateful to Congress for the recent agreement to increase the discretionary budget caps for fiscal years 2018 and 2019. If sequestration budget caps return in FY 2020, the Army Reserve will incur significant risk in training, facility restoration and modernization, and equipping and modernization programs vital to winning the Nation's wars. To date, the Army Reserve has managed to fund training for critical units.

Sustaining critical operational capabilities requires consistent, adequate, and predictable funding over time. Past budget uncertainty and the 2013 sequester have negatively impacted modernization and equipping investments. To ensure Army Reserve units are ready when called upon, Army Reserve Training Centers that support Home Station training requirements must be adequately resourced and properly configured to maintain quality facility conditions.

The velocity of technology change continues to outpace the Army's modernization strategy

and the resources required to procure and sustain the most modern equipment across the entire force. Given Army priorities and resources levels, the Army Reserve is at risk striving to maintain battlefield commonality. Risk is particularly acute for the Army Reserve in Mission Command Systems, to include battle command systems, tactical radios, and satellite transport platforms. Moving forward, America's Army Reserve will focus its innovation efforts on units that must be postured to provide critical early entry and set-the-theater capabilities.

From FY 2015 to FY 2016, the National Guard and Reserve Equipment account (NGREA) funding allocated to the Army Reserve enabled investments in tactical wheeled vehicles (\$164M), engineer equipment (\$28M), simulations (\$23M), and field logistics (\$21M). Using FY 2017 NGREA funds, the Army Reserve will procure Critical Dual Use (CDU) items, including Logistics Automations Systems, Bridge Erection Boats, Power Distribution Systems and Scrapers in support of Defense Support of Civil Authorities (DSCA).

AMERICA'S ARMY RESERVE: CAPABLE. COMBAT-READY AND LETHAL

America's Army Reserve is a capable, combat-ready, and lethal team providing critical capabilities to Army Service Component Commands and all Combatant Commands. Although the threats to America are dynamic and increasing every day, your Army Reserve remains a highly effective and responsive force for the nation. As it has since its founding in 1908 as the Medical Reserve Corps, today's Army Reserve – anchored in civilian employment and local communities across the nation, and highly trained and educated in 148 different military career fields – stands ready to serve the Nation at home and abroad. America's Army Reserve – a force of technically and highly skilled Soldiers, leaders, and units: Capable. Combat-Ready. Lethal.

Ms. GRANGER. Thank you.

SUMMARY STATEMENT OF ADMIRAL MCCOLLUM

Admiral McCollum. Chairman Granger and Ranking Member Visclosky, thank you very much. And for the sake of time, I will also have brevity in my remarks. Just to point out, just like my colleagues to my right and left, right here as we sit, we have our men and women serving around the world, and when they serve around the world, that means they are absent from their employers, and they are also absent from their families. And supporting them—the unwavering support we have been given, we are very grateful for.

They are force multipliers. As we look at how the contribution of not only from unique skill sets but also credible combat capability, and your very generous support in supporting them from programs such as Yellow Ribbon, redeployment support, family programs, and certainly the training dollars, the readiness dollars, to allow them to do that.

Mobilizations continue. And our guidance to our force is to be ready, and we focus on generating readiness and do that in various forms, from individual readiness to joint readiness with groups at the unit level and at the combat level, integrated force. Just yesterday, the Harry S. Truman Strike Group departed for deployment, and this afternoon the Carl Vincent Strike Group returns from a deployment.

So, in that portfolio, it is very symbolic of how the Reserve Component supports the integrated force. The Navy Reserve uses discretionary RPN, and that is how we generate our readiness, individual readiness, and then sets and reps, as we call it, for integrated readiness. And your continued support there is very appreciated.

NGREA funding is another tool and lever that we use to have niche purchase power where we can, in broad scale, support our sailors broadly. And your continued support there in a flexible fashion is very much appreciated.

Finally, one last point in a piece of our hardware portfolio is our Strike Fighter F-A18s. We do operate the legacy aircraft. We are asked to do integrative ops, adversary flyings to certify our battle strike groups before they deploy, and in that regard, interoperability is key. And so we look forward to future conversations with Congress as we begin to recapitalize those assets.

And, finally, I would just say, in spite of the many challenges that we have in managing operations, personnel, and other things that a commander has to face, one of the greatest privileges we have is to lead and serve with and serve our men and women, and to be with them—as a matter of fact, I will be leaving this afternoon to go and spend time into operations to witness this. It is our greatest privilege. And with your support, we will continue to do that. And, again, it is our honor to be here and look forward to answering any questions.

[The written statement of Admiral McCollum follows:]

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SUBCOMMITTEE ON DEFENSE
COMMITTEE ON APPROPRIATIONS

STATEMENT OF
VICE ADMIRAL LUKE M. McCOLLUM, U.S. NAVY
CHIEF OF NAVY RESERVE
BEFORE THE
HOUSE SUBCOMMITTEE ON DEFENSE
COMMITTEE ON APPROPRIATIONS
FISCAL YEAR 2019 NATIONAL GUARD AND RESERVE

APRIL 12, 2018

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SUBCOMMITTEE ON DEFENSE
COMMITTEE ON APPROPRIATIONS



United States Navy Biography

**Vice Admiral Luke M. McCollum
Chief of Navy Reserve
Commander, Navy Reserve Force**

Vice Adm. Luke McCollum is a native of Stephenville, Texas, and is the son of a WWII veteran. He is a 1983 graduate of the U.S. Naval Academy and is a designated surface warfare officer. McCollum holds a Master of Science in Computer Systems Management from the University of Maryland, University College and is also a graduate of Capstone, the Armed Forces Staff College Advanced Joint Professional Military Education curriculum and the Royal Australian Naval Staff College in Sydney.

At sea, McCollum served on USS Blue Ridge (LCC 19), USS Kinkaid (DD 965) and USS Valley Forge (CG 50), with deployments to the Western Pacific, Indian Ocean, Arabian Gulf and operations off South America. Ashore, he served in the Pentagon as naval aide to the 23rd chief of naval operations (CNO).



In 1993 McCollum accepted a commission in the Navy Reserve where he has since served in support of Navy and joint forces worldwide. He has commanded reserve units with U.S. Fleet Forces Command, Military Sealift Command and Naval Coastal Warfare. From 2008 to 2009, he commanded Maritime Expeditionary Squadron (MSRON) 1 and Combined Task Group 56.5 in support of Operation Iraqi Freedom. He also served as the Navy Emergency Preparedness liaison officer (NEPLO) for the state of Arkansas.

As a flag officer, McCollum has served as reserve deputy commander, Naval Surface Force, U.S. Pacific Fleet; vice commander, Naval Forces, Central Command, Manama, Bahrain; Reserve deputy director, Maritime Headquarters, U.S. Fleet Forces Command; and deputy commander, Navy Expeditionary Combat Command.

McCollum became the 14th chief of Navy Reserve in September 2016. As commander, Navy Reserve Force, he leads approximately 60,000 Reserve Component personnel who support the Navy, Marine Corps and joint force.

He is the recipient of various personal decorations and campaign medals and has had the distinct honor of serving with shipmates and on teams who were awarded the Joint Meritorious Unit Award, the Navy Unit Commendation, the Meritorious Unit Award and the Navy "E" Ribbon.

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INTRODUCTION

Chairwoman Granger, Ranking Member Visclosky, and distinguished Members of the Subcommittee, as Chief of Navy Reserve it is my distinct honor to report to you on the state of the United States Navy Reserve and to discuss our fiscal year (FY) 2019 budget request.

The value of the Nation's investments in the Navy Reserve cannot be overstated. Our force is comprised of 59,000 citizen sailors from every state and territory. Historically comprising less than 2 percent of the Navy's total annual budget, Navy Reserve Sailors have mobilized over 81,000 times to every theater of operation since 2001, including 2,961 personnel in FY 2017. On any given day, 20 percent of the Reserve force is operating, delivering critical support to our forces around the globe. As a perpetually-ready surge capability, operationally integrated with the total force, your Navy Reserve continues to deliver scalable lethality in defense of our Nation. On behalf of Navy reservists and their families, I would like to extend my sincere gratitude for your continued support. The work of the defense committees makes this capability possible.

FORCE STRUCTURE

Today's force structure is the result of Navy's imperative to optimize the interoperability and operational effectiveness of the Navy Reserve. Due to Active/Reserve integration efforts over the past 15 years, Reserve Sailors train and work alongside Active Component (AC) counterparts and units. Integrated partners in the Navy total force, Reserve Sailors provide a rapid response to calls for support, often on short notice. Additionally, Reserve Component (RC) hardware units, aligned and integrated with AC unit training and deployment cycles, are force

multipliers through mission augmentation that provide surge capacity to Combatant Commands worldwide.

Commander, Navy Reserve Forces Command operates six regional headquarters and 123 Navy Operational Support Centers (NOSCs), located in all 50 states, Puerto Rico, and Guam. NOSCs collectively serve as drilling locations and provide administrative support to over 1,400 RC units. NOSCs reside on and off DoD installations, a mix of stand-alone facilities, Navy-Marine Corps Reserve Centers, and joint Armed Forces Reserve Centers.

Commander, Naval Air Forces Reserve comprises three air wings, two Joint Reserve Bases and one Naval Air Facility. Fleet Logistics Support Wing and Tactical Support Wing reside at Naval Air Station-Joint Reserve Base Fort Worth, TX, while Maritime Support Wing is headquartered at Naval Air Station North Island, CA. Naval Air Forces Reserve Joint Reserve Bases are in Fort Worth, TX, New Orleans, LA, and the Naval Air Facility is in Washington, D.C. In addition to these standalone commands, the Navy Reserve operates multiple Squadron Augment Units which directly support various AC Navy squadrons around the country. Navy Reserve owns and flies approximately 150 aircraft supporting the Navy total force.

Commander, Naval Information Force Reserve, Ft. Worth, TX, is executive agent for nine of 28 multi-service Joint Reserve Intelligence Centers (JRICs) located throughout the country. These facilities provide fully capable intelligence and cyber warfare centers enabling wartime readiness through training and operations, and real-time intelligence support to Combatant Commands, Combat Support Agencies, the intelligence community, and Navy fleets.

CURRENT OPERATIONS

In 2017, Navy Reserve continued its century-long tradition of supporting Navy, Marine Corps and Joint Operations, contributing to overseas contingency operations in every Area of Responsibility, increasing the collective lethality of our total force. Navy Reserve offers a unique response capability and range of options to Combatant Commander requirements – from mobilization of an entire unit to activation of a single Individual Augmentee Sailor. This model delivers increased flexibility, with both operational capacity and strategic depth for the total force, in a dynamic global security environment.

In mid-January, over 3,000 Navy Reservists were mobilized, 1,076 were preparing to mobilize, and 188 were de-mobilizing. These sailors support Combatant Commands around the globe, and individual mobilizations add to the broad and diverse operational support missions Navy Reserve executes on a daily basis, including Expeditionary Warfare, Naval Air Warfare, Fleet Air Logistics, Cyber Warfare, Unmanned Aerial Vehicles, and Shipyard Maintenance. One example is Navy Expeditionary Combat Command, 50 percent of which is composed of Reserve Component Sailors.

READINESS

Navy Reserve's #1 guiding principle is warfighting. We are a ready and lethal military force, maximizing value to the Nation by modernizing the way we do business. We work hard to efficiently and effectively support the Active Component, while making optimal use of talented Reserve Sailors to increase total force capability. We develop Sailors who are "Ready to Win". This concept accelerates the impact of Navy Reserve's mission in the new competitive global environment, through four key focus areas:

- Resourcing the manning, training, and equipment that delivers Navy Reserve capabilities to the fleet;
- Leveraging Reserve Sailors' civilian skills and partnerships with industry and academia;
- Enabling Sailors to more effectively provide warfighting capabilities through innovative application of technology and supportive policies; and,
- Simplifying the way Reserve Sailors support the fleet.

RESOURCE

FISCAL PREDICTABILITY

Predictable and dependable funding ensures that Navy Reserve Sailors are able to provide consistent and timely operational support to the Total Force. Discretionary Reserve Personnel, Navy (RPN) funding is the primary fiscal means by which the Navy Reserve provides this support. Current RPN funding level supports 31 percent of Combatant Commander operational demand. Your continued support to ensure robust, consistent, and predictable RPN funding is the most important enabler for maintaining readiness and Navy Reserve mission accomplishment.

EQUIPPING THE FORCE

The Navy Reserve provides additional capacity and lethality to the total force. To maximize this capability, aircraft recapitalization is without question Navy Reserve's number one equipment priority – critically important to supporting the warfighter. Almost 16 years of increased operational tempo within a constrained procurement environment has taken its toll on the aircraft and equipment that RC sailors operate. Navy Reserve's integrated force structure depends on the ability to quickly and seamlessly assimilate with active units to execute the

mission. Accordingly, Navy Reserve depends on the availability of modern, compatible hardware to support the AC fleet.

The Navy Reserve air logistics component, made up entirely of RC sailors, fulfills the Navy's requirement for Navy Unique Fleet Essential Airlift capability. Operating C-40A and C-130T aircraft, Navy Reserve executes 100 percent of the Navy's organic air logistics support mission providing responsive, flexible, and rapidly deployable air logistics support required to sustain combat operations at sea. We appreciate this committee's support, which permitted Navy Reserve to purchase two additional C-40A aircraft which, once delivered to Kaneohe Bay, HI, will fulfill the risk-adjusted wartime inventory requirement of 17 aircraft. Meanwhile, our C-130T aircraft average age is 23 years, and maintenance issues heavily impact their reliability. Since the C-130T propeller grounding bulletin was issued by Naval Air Systems Command in September of last year, the Navy Reserve C-130T fleet has been grounded until critical maintenance is completed. This event has degraded Navy's organic lift capability, further highlighting the value to the total force. Accordingly, Navy has committed to recapitalizing these assets with KC-130Js, an exceptional and proven system, already operating in DoD, which ensures the foreseeable security and capability of Navy Air Logistics. There are currently three such aircraft programmed into the President's 2019 budget with procurement set to begin in FY 2023. Finally, to address the short and medium term impacts of the C-130 grounding, the Navy Reserve is replacing the legacy propeller system with an upgraded system currently in use on Navy E-2 Hawkeyes. This proven system has also flown for over five years on Air Force C-130s, ensuring continued safety and viability of our legacy C-130T fleet until KC-130J recapitalization is complete.

The Navy is addressing much needed RC strike-fighter aircraft recapitalization requirements. The 31 F-18A+ legacy Hornets assigned to Navy Reserve squadrons include some of the oldest in operation, and are unable to deploy. Significant maintenance issues limit aircraft availability as these squadrons struggle to meet their operational mission, while system compatibility limitations hamper fulfillment of their strategic reserve role. In the near term, Navy plans to recapitalize RC F/A-18A+ aircraft with F/A-18C/Ds from the active duty fleet. When the AC completes the transition from legacy Hornets to Super Hornets and begins transitioning squadrons to the Joint Strike Fighter, an eventual transition of RC Hornets to later generation strike fighters will be possible. This recapitalization is directly linked to improved depot throughput and timely AC recapitalization through procurement of advanced strike aircraft. The additional 10 F/A-18s included in the FY 2018 budget and 24 in the FY 2019 budget request help increase the pace of this program and continued attention will help improve Navy Reserve's timeline for recapitalization.

Navy's surge capacity within the Maritime Patrol and Reconnaissance Force consists of two RC patrol squadrons operating legacy P-3C Orion aircraft. These squadrons comprise 13 percent of Navy's current Intelligence, Surveillance and Reconnaissance capacity and provide Combatant Commanders with a vital asset. Previous fiscal constraints have prevented transition to P-8A aircraft for the Navy Reserve resulting in the shutdown of the two Reserve squadrons in Whidbey Island, Washington, and Jacksonville, Florida in 2023.

The overall health of the nine Navy-hosted JRICs is second to none. Each year, the Joint Reserve Intelligence Program recognizes one of the Service's JRICs that best demonstrates the core values of the program: promoting Jointness, providing flexible access to allow tenants to meet mission needs, and providing first class facilities and staff support. Since 2002, Navy JRICs

have won the award nine times, with JRIC Minneapolis, MN winning in 2017. Although Navy hosts less than a third of all JRICs (9 of 28), they have won 60 percent of these annual awards.

JRIC Norfolk, VA is currently undergoing a multiyear, \$10 million renovation to bring this aging facility up to current day operational standards. In New Orleans, LA, we are executing Military Construction to build a new JRIC, repurposing an existing building, to build a state of the art intelligence facility. In Denver, CO and Jacksonville, FL the JRIC server rooms are under renovation, correcting deficiencies and increasing operational capabilities. Across all JRICs, plans are underway to modernize our security systems and networks protecting our facilities, providing secure classified facilities for Reservists throughout the country.

LEVERAGE

CIVILIAN SKILLS

Many skills possessed by Reserve Sailors add invaluable expertise and capability to the total force. In some cases, RC Sailors' civilian skills have provided unique capabilities in critical mission areas not specifically cultivated in the AC. Conversely, the military training and professional development provided to Reservists make them more capable leaders in their civilian communities. Citizens who serve in the Navy Reserve strengthen the bond with the American public, while educating families, employers, and communities about military service. Whether a tradesman, first responder, executive, or licensed professional, Navy has long benefitted from the civilian experience and maturity of RC sailors. Most recently, Navy has called to serve Digital Warfare experts, Advanced IT Programmers, and Additive Manufacturing Experts, because of their specialized capabilities across critical mission areas.

Having a pool of ready civilian professionals across numerous mission areas is an invaluable strategic capability that only a Reserve force can provide. Going forward, the Navy Reserve is reevaluating and improving processes in order to more completely capture and leverage these abilities. This unique combination of civilian and military experience and skills offers diversity of thought and insight, which inspires innovation and acts as a force multiplier. There is no question that, on a daily basis, specific civilian skills are being utilized across the total force.

ENABLE

TRANSFORMATION

Navy's Manpower Personnel Training and Education (MPT&E) Enterprise is undergoing a holistic, end-to-end, transformation of business processes and information technology systems. MPT&E Transformation is built around four fundamental pillars: Overhaul Processes, Modernize Information Technology Systems, Develop a Single Source of Data Truth and Comprehensive Analytics, and Create World Class Sailor Self Service. Together these pillars will improve personnel customer service, data and data reporting accuracy, auditability, and permeability between the active and reserve components.

Two information technology systems will work together to provide necessary processing, data retention and reporting: The Navy Personnel and Pay system and the Authoritative Data Environment. Navy MPT&E is also shifting to a centralized, and standardized, customer service model, which will ensure data input is faster and more accurate, while providing greater access to the metrics necessary for performance monitoring and improvement. Standup of the My Navy Call Center will include a dedicated Shared Service Center Reserve Branch, in which Reserve

active duty personnel/pay transactions will be centralized. Combined, these efforts will improve and simplify Navy's support to our Reservists, thereby enhancing Reserve support to the total force.

MOBILE TECHNOLOGY

Every Reserve Sailor's time must be focused, to the greatest possible extent, on the mission and not on administrative overhead. As such, mobile access to the myriad of Navy IT systems is a key enabler for Navy Reserve Sailors to maintain mobilization readiness and perform their mission requirements. In conjunction with Navy's MPT&E Transformation and Sailor 2025, the Navy Reserve is both consolidating and modernizing the various systems that enable and manage readiness, while improving access to those systems. Navy Reserve has taken a full-spectrum approach and has partnered with industry to produce creative and advanced IT solutions, such as allowing Sailors to conduct business using a mobile application that grants access to various Navy IT systems, a cloud-based pilot to provide Sailors 24/7 access to office productivity and collaborative tools, and expanded Navy NOSC Wi-Fi capabilities to maximize use of personal devices during drill weekends. Collectively, these solutions reduce the time and effort required to meet readiness and training requirements.

EMPLOYERS

Our Nation's Reserve forces rely heavily on the sacrifice and dedication of local employers in each member's home state to support the nation's hundreds of thousands of Reservists. Many companies provide flexible work options for both drilling and deploying RC service members. Some companies go above and beyond that which is required by law, and continue to support RC members with pay and benefits while activated, to reduce any potential pay gap during Reserve activation. For both large and small companies, this sacrifice can be

considerable. Most importantly, supportive employers send a clear message to RC members that they need not worry about their civilian jobs when called to serve. The value of this simple message cannot be overstated - an employer's level of cooperation, support, and encouragement is directly related to the productivity and mission focus of RC members when they put on the uniform, and ensures that that Reserve service remains a viable option for their employees. Employer support remains a vital component of the success of the entire RC, and Navy Reserve goes to great lengths to recognize supportive employers each year through various programs and initiatives.

FAMILIES

Not only do our Reservists' employers enable our total force, they support the families of those Sailors who also bear a great burden. Through our robust suicide prevention and resilience programs, such as the Returning Warrior Workshop, Psychological Health Outreach Program, the Yellow Ribbon Reintegration Program, Operational Stress Control, and Navigating Stress for Families, the Navy Reserve strives to minimize stressful impacts on families, during and following mobilization.

In spite of all the world-wide pressures we face every day, our Reserve citizen sailors have become incredible managers across three paradigms – military service, civilian employment, and family stability. Please allow me to brag about a few of these great servant leaders. One Petty Officer from Allentown, PA is a Reserve crew chief, serving over 100 days a year in locations around the globe. She also works for a print media company in her hometown, all the while, raising 2 young adults. One Reserve Commander from San Diego, CA has command of a three plane Reserve squadron while growing a restaurant franchise and raising a

family of five. In addition, in 2015 he volunteered as an Individual Augmentee to the Middle East. Bottom line, the sacrifices our citizen sailors make are nothing less than astounding.

SIMPLIFY

DUTY STATUS REFORM

Currently there are dozens of statutory authorities used when activating RC personnel. RC Duty Status Reform is complex and often confusing; as such, multiple studies have been initiated beginning as early as 1999. DoD has developed a proposal to reform the current RC duty status construct, and has begun working on draft legislation due to Congress in April 2019, pursuant to Section 513 of the National Defense Authorization Act for Fiscal Year 2018 (Public Law 115-91).

ACCESS

Navy has become increasingly reliant on regular and reliable access to the RC since September 11, 2001. Under the Presidential Declaration of National Emergency, the Services and Combatant Commanders have relied on involuntary mobilizations under title 10, United States Code, section 12302. However, when National Emergency declaration lapses, RC access would be limited to service performed pursuant section 12304b, which provides involuntary access only for pre-planned missions of units supporting Combatant Commander requirements. In addition, there are differences in benefits the Department provides to Reservists depending on the mobilization authority under which a member has been activated.

CONCLUSION

America's Navy Reserve stands ready. Our proud citizen Sailors continue to carry on the tradition of supporting the Navy, Marine Corps and joint force wherever, and whenever, called to serve. The Navy Reserve will continue to ensure our warfighters have the tools needed to effectively and efficiently accomplish the mission. Through stable and predictable RPN funding and through recapitalizing our aging aircraft we will increase the overall readiness and become a more lethal warfighting force. I look forward to working with you and I thank you for your continued support.

SUMMARY STATEMENT OF GENERAL McMILLIAN

General McMILLIAN. Chairman Granger, Ranking Member Visclosky, and distinguished members of the subcommittee, thank you for the opportunity to appear before you today to testify on behalf of the Commandant of the Marine Corps about your Marine Corps Reserve. I am honored to be here with my fellow Reserve Component service chiefs, and I will be brief.

I have been at the helm of Marine Forces Reserve for 2½ years, and I am pleased to inform you that your Marine Corps Reserve is thriving. Morale remains high, as evident by Reserve Component end strength climbing to 99 percent of our total requirement. Our reenlistment rate increasing over 25 percent during the past 3 years, all while the demand for reserve support to combatant commanders requirements continues to rise.

The responsibility that we carry in the Marine Forces Reserve is to be able to respond tonight and on a moment's notice with fully manned, trained, equipped, and superbly led compatible units that can instantly and seamlessly plug into Active Component formations. The critical capabilities provided by Marine Forces Reserve to the total force increases the lethality of the Corps and contributes to the competitive advantage maintained over our adversaries.

At any given time, Marine Forces Reserve stands ready to provide a brigade-sized element of Reserve marines and sailors fully trained for combat operations to support the Active Component in order to form a total force fight-tonight capability while the remainder of our force remains poised to augment and reinforce, given amounts of predeployment training based on their wartime mission assignments.

I would like to leave this distinguished body with two thoughts on how continued support from Congress can result in a more lethal Marine Corps Reserve force, number one. Reserve marines have 38 training days per year, and every scheduled event is preparation for combat. Missed training opportunities are often unrecoverable in terms of personnel, material, and training readiness, while morale and retention of the force suffers.

During the shutdown on January 20, almost 8,000 personnel across 62 units had their drill weekend canceled or reduced, resulting in lost training opportunities. I cannot afford to lose 1 minute of training for our Nation's most precious assets, our young volunteer men and women that make up your Marine Corps Reserve. Therefore, I cannot overemphasize how a lapse of appropriations negatively impacts readiness across the Reserve force. And I thank you in advance for your continued support through timely appropriations.

Number two, the Marine Corps Reserve benefits from the National Guard and Reserve equipment appropriation. I want to extend my gratitude for your continued support of NGREA and would appreciate greater spending flexibility within this appropriation in order to procure critical shortfall items and modernized equipment and systems. I appreciate the opportunity to be here today, and I look forward to your questions.

[The written statement of General McMillian follows:]

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BY THE HOUSE APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON DEFENSE

STATEMENT OF
LIEUTENANT GENERAL REX C. McMILLIAN
UNITED STATES MARINE CORPS RESERVE
BEFORE
THE HOUSE APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON DEFENSE
CONCERNING
THE GUARD AND RESERVE
ON
APRIL 12, 2018

NOT FOR PUBLICATION UNTIL RELEASED
BY THE HOUSE APPROPRIATIONS COMMITTEE
SUBCOMMITTEE ON DEFENSE

Lieutenant General Rex C. McMillian

Lieutenant General Rex C. McMillian is the 10th Commander of Marine Forces Reserve and concurrently serves as Commander, Marine Forces North.

Prior to becoming Commander of MARFORRES and MARFORNORTH on 12 Sep 2015, Lieutenant General McMillian served as the Senior Reserve Advisor to the Commander of NORAD and U.S. Northern Command. He previously served as Director of Reserve Affairs in Manpower and Reserve Affairs, HQMC. From 2009-2011, he was the Commanding General of the 4th Marine Aircraft Wing. He also had the pleasure to serve as the Deputy Commander, 1st Marine Expeditionary Force and the Deputy Commander, Marine Forces Pacific.

Lieutenant General McMillian served as the Chief of Staff for 3d MAW and other billets during multiple tours to Iraq for Operation Iraqi Freedom. He has also served as the Deputy Commander of MAG-46 and the Commanding Officer of VMFA-134.

A native of Norfolk, VA and raised in Middletown, California, Lieutenant General McMillian graduated from the University of Southern California and was commissioned in January 1980. He served in multiple Marine Corps and Navy Squadrons flying primarily the F-4J and the F/A-18. His flight time in various military jets, helicopters, and propeller driven aircraft exceeds 3,800 hours.

Lieutenant General McMillian served nine years of active duty prior to transitioning to the Marine Corps Reserves. He is a Captain for Delta Airlines when not mobilized.

Lieutenant General McMillian and his spouse, Rebecca, have been married for 37 years and have three children: Kyle, Rachel, and Thomas.

Introduction

Chairman Granger, Ranking Member Visclosky and distinguished members of the Subcommittee, it is my privilege to appear before you and provide an overview on the current state of the Marine Corps Reserve.

As the Assistant Commandant of the Marine Corps testified, fiscal instability, resulting from persistent Continuing Resolutions and looming and actual government shutdowns, produce the most significant risk to our readiness. Reserve Marines have 38 training days per year (24 inactive duty days and 14 annual training days). Missed training opportunities are often unrecoverable in terms of personnel, material, and training readiness, while morale and retention of the force suffers. During the orderly shutdown on January 20, 2018, two to three training days were lost. Some units had multi-day or week-long exercises which were cancelled or cut short. Ultimately, 7,793 personnel across 62 units (20 percent of Marine Forces Reserve) had their readiness impacted due to their drill weekend being cancelled or reduced, resulting in lost training opportunities.

Although these lost opportunities negatively impact the Reserve Component's ability to serve side-by-side with their Active Component counterparts, your Marine Corps Reserve has been fully engaged across the globe over the past 16+ years of combat operations – serving as an essential shock absorber and force multiplier. Our focus remains on maintaining the ability to provide manned, trained, equipped, and well-led forces capable of augmenting, reinforcing, and supporting the Active Component. With your continued support, it will further strengthen our readiness and ensure we remain ready to fight and win across the range of military operations and in all warfighting domains.

A Total Force

The United States Marine Corps remains the Nation's forward deployed, agile, Expeditionary Force in Readiness. As the Commandant of the Marine Corps previously stated, we are one Marine Corps – a Total Force Marine Corps. For approximately eight percent of the Department of Defense (DoD) budget, your Corps provides the American people with an exceptionally capable, extremely affordable, immediately responsive, and lethal national security force. As an integral part of the Total Force, the Marine Corps Reserve plays a key role in providing that national security force.

The critical capabilities provided by the Marine Corps Reserve to the Total Force increases the lethality of the Corps and contributes to the competitive advantage maintained over our adversaries. Over the past year, the Marine Corps Reserve supported combatant commanders by providing forces focused on combat operations, crisis prevention, crisis response, and theater security cooperation. Global deployments, along with participation in Service, Joint, and multi-national exercises, develop the depth of experience of the Reserve Force, ensuring the Marine Corps Reserve is relevant, ready, and responsive to meet combatant commanders' requirements for highly trained general-purpose forces.

In 2017, more than 810 Reserve Marines mobilized supporting 28 operational requirements in five of the six geographic combatant commands. Likewise, nearly 10,940 Reservists participated in 96 training exercises, supporting requirements in 43 countries across the globe. These activations included support to U.S. Northern Command during Hurricane Harvey, Irma and Maria. Utilizing 12304a activation authority, Marine Forces Reserve provided the rapid deployment of 745 Marines for recovery efforts. Additionally, 196 Reserve Marines volunteered to

serve as individual augmentees, providing support to combatant commanders and Service staffs. Marine Forces Reserve filled 40 percent of the total Marine Force individual augment requirements and increased its deployment by 50 percent in the last two years. This high quality and quantity of opportunities persist in the current year, as the demand remains high for your Marine Corps Reserve – for perspective, the Marine Corps deployed eight Reserve formations in 2001, compared to 140 Reserve formations in 2017.

In 2018, Marine Forces Reserve will continue to support the combatant commanders by mobilizing in excess of 2,500 Reservists and almost 12,000 Marines for a multitude of theater-specific exercises and security cooperation events. These operations and exercises greatly increase the Reserve Component's interoperability with the Active Component, Joint Forces, and our allies.

The demand for the Marine Corps' unique capabilities has increased, requiring more Reserve Component activations of units and ad hoc formations to produce enabling capabilities across the range of military operations. For example, Marine Forces Reserve increased the participation of Marines filling the emerging security force and advisory requirements in southwest Afghanistan. In addition, for the third year in a row, we have mobilized and will deploy a task-organized Special Purpose Marine Air-Ground Task Force to U.S. Southern Command in support of theater security cooperation objectives. Activations of whole units followed the increase of ad hoc formations. Reconnaissance and amphibious assault vehicle platoons activated for support to III Marine Expeditionary Force's requirements in Okinawa, Japan. Later this year, we will activate 2nd Battalion, 23D Marines which will also deploy to Okinawa.

Marine Forces Reserve continues to provide daily support to combatant commanders in a wide range of roles that include multi-lateral exercises, such as Saber Strike 18 in Latvia, Ulchi

Freedom Guardian 18 in South Korea, and Maple Resolve 18 in Canada. I anticipate Marine Forces Reserve will continue to deploy and integrate with the Active Component to meet combatant commander high-priority requirements through the use of existing mobilization authorities.

In addition to participating in operational requirements across the globe, Marine Forces Reserve supports the Total Force by dutifully executing the sensitive and crucial mission of providing casualty assistance to the families of our fallen Marines. There is no responsibility that we treat with higher regard than the solemn mission of providing casualty assistance. Inspector-Instructor and Reserve Site Support Staffs are geographically positioned to accomplish the vast majority of Marine Corps casualty assistance calls and are trained to provide compassionate and thorough assistance to families. Indeed, the majority of Marine Corps casualty notifications and follow-on assistance calls to the next of kin are made by our Marines. During Calendar Year (CY) 2017, our Inspector-Instructor and Reserve Site Support staffs performed 80 percent of the 193 casualty calls performed by the Marine Corps.

The professionalism and compassion of our Casualty Assistance Calls Officers (CACOs) continues well beyond the initial notification. We ensure that our CACOs are well trained, equipped, and supported by all levels of command through the combination of in-person and online training. Once assigned, the CACO serves as the family's central point of contact and coordinates with funeral homes, government agencies, and other organizations. They assist family members with planning the return and final resting place of their Marine; and ensure the filing of appropriate documents is completed so that the family receives all benefits to which they are entitled. In many cases, our CACOs provide a long-lasting bridge between the Marine Corps and

the grieving family.

Additionally, Marine Forces Reserve units and personnel provide significant support for military funeral honors for our veterans. The Inspector-Instructor and Reserve Site Support staffs, with augmentation from additional Reserve Marines, performed more than 20,000 military funeral honors, which represented 93 percent of all funeral honors rendered by the Marine Corps during CY 2017. As with casualty assistance, we place enormous emphasis on providing timely, compassionate, and professionally executed military funeral honors, although this comes with a cost to readiness – as some Marine Reserve units are executing in excess of 250 funerals per year, impacting their ability to maintain or increase readiness.

Finally, Marine Forces Reserve serves as the most wide reaching link between the Marine Corps and communities across the Nation. We are the face of the Marine Corps to the majority of the American public. With Reserve units located across the country, Marine Forces Reserve is uniquely positioned to interact with the public and communicate the Marine Corps story to our fellow citizens; most of whom have little or no contact with the Marine Corps. For example, last year Marine Forces Reserve personnel and units conducted more than 500 local and regional public engagement and community relations events across the country.

Predictability

Our Force Generation Model provides a level of predictability for force planners and our Reserve Marines, while maintaining the “train as we fight” philosophy. The Model provides our Reservists, their families, and their employers the ability to plan for upcoming duty requirements five years and beyond. This empowers service members to achieve the critical balance between family, civilian careers, and service to our Nation while enabling informed employers to plan for and manage the temporary absence of valued employees.

We ensure units and personnel are ready to meet any challenge by employing a Force Generation Model that rotates Marine Reserve units through a five-year Training and Readiness Plan. At any given time, the Force Generation Model enables the Reserves to provide combat ready units and detachments based on major contingency operation plans and the Corps' Force Management Plan. This ready bench includes Air Naval Gunfire Liaison Companies, Civil Affairs Groups, large-scale logistical augmentation, four infantry battalions, artillery and aviation capabilities, as well other critical enablers. In total, more than 4,000 Reserve Marines and Sailors are prepared to augment and reinforce Active Component forces rapidly in support of a contingency response or as part of a theater security cooperation mission.

The key element in the Force Generation Model is the consistent integration of Reserve units, detachments, and individuals into Service, Joint and multi-lateral exercises, thereby building increasing interoperability over the plan's five-year cycle. Generally, units are assessed through a culminating Integrated Training Exercise (ITX) during the fourth year of the training cycle. Seamless integration with the Active Component in training exercises is conducted in the United States and abroad; this training facilitates the Active and Reserve Components interoperability, thus achieving success with the Total Force Marine Corps.

Personnel

Marines, Sailors and our civilian Marines are the foundation of all that we do. The resources we dedicate to sustaining and developing this foundation directly contribute to the success of our institution. The vast majority of the Marine Corps Selected Reserve's authorized end strength of 38,500 fall under Marine Forces Reserve. The Selected Reserve is composed of Marines in four categories: Selected Marine Corps Reserve Units, Active Reserve, Individual

Mobilization Augmentees, and service members in initial training. Embedded with these Marines are 1,800 Active and Reserve component Sailors who serve critical roles in the operational, medical, dental, and spiritual readiness of our Reserve Force. The success of Marine Forces Reserve would not be possible without continued support from the U.S. Navy.

In addition to the Marines and Sailors of the Selected Reserve, Marine Forces Reserve administratively controls approximately 65,000 Marines who serve in the Individual Ready Reserve (IRR). Marine Forces Reserve continues to monitor the mobilization viability of these Marines who have fulfilled their active service commitment and returned to civilian life. The mobilization potential of the IRR is monitored through the use of muster events that are conducted at multiple locations across the country. These muster events are the Marine Corps' opportunity to physically inspect these Marines to ensure they meet the requirements for mobilization. These events also provide the opportunity to address administrative issues, complete mental health and post-deployment assessments, review Reserve obligations and new opportunities, meet with prior service recruiters, and reconnect with fellow Marines. During the past year, Marine Forces Reserve conducted 33 physical muster events with 4,770 IRR Marines. An additional 48,000 members of the IRR were contacted and screened telephonically.

The Marine Corps Reserve strives to retain the very best Marines capable of fulfilling our leadership and operational needs. The option of continued service in the Reserve Component has become increasingly appealing to young Marines leaving active duty. Marines approaching the end of their current contracts, whether Active or Reserve Component, receive counseling on the tangible and intangible benefits of remaining associated with the Selected Reserve. We educate each transitioning Active Component Marine on opportunities for continued service in the Marine Corps Reserve through the Marine Corps' transition assistance and educational outreach programs.

We have concentrated on improving our personnel administration and retention programs, with the result being record high personnel readiness levels. Throughout the past year, our Marines have worked hard to initiate enhancements to our administrative processes and standard operating procedures. Additionally, we are improving the timeliness and accuracy of Reserve pay and entitlement disbursement through consolidated administration at the battalion, squadron, and group levels.

Recruiting and retaining high quality Marines remains essential to the Marine Corps' reputation as the Nation's Force in Readiness. Marine Forces Reserve enjoys high affiliation and retention rates enhanced through incentive programs, such as occupational specialty retraining, inactive duty travel reimbursement, and bonus payments. These programs remain essential to ensure we continue to meet authorized end strength and retain our most talented Marines. Your continued support to these critical programs has helped maintain our overall personnel end strength to 99 percent of the total requirement, with a grade and Military Occupational Specialty match rate of 85 percent. This high rate of personnel readiness is not only reflective of the health of the force, but directly contributes to our overall operational readiness. While we fully expect to meet our Selected Marine Corps Reserve retention and recruiting goals again this year, continued use of these incentive programs are critical to optimally align our inventory against our requirements, maintain individual and unit-level readiness, address shortfalls in staff non-commissioned officers, and fully rebuild readiness from previous force structure changes. Your continued support for incentives that promote service in our Reserve Force will ensure our ability to recruit and retain the very best service members.

Equipment

Reserve Component units remain highly interoperable with their Active Component

counterparts due to the Marine Corps' Total Force approach to equipment fielding and management. Active and Reserve Component Forces are manned, trained and equipped to the same standards, facilitating the seamless employment of Reserve Component Forces to meet combatant commander requirements. Marine Forces Reserve mission essential equipment readiness levels are sufficient and capable of supporting all home station training requirements, as well as current operational deployments, with the exception of several select aviation units.

In the Reserve Component, personnel resources to identify and conduct maintenance are limited to the small full-time support staffs at each Reserve Training Center. These staffs are augmented by Reserve Marines during the monthly drill and two week annual training periods. Focusing these limited resources on the combat essential readiness reportable items constrains routine preventative and corrective maintenance on the remainder of equipment. Recent modernizations, coupled with the increase in equipment density and complexity, have compounded this challenge.

For many years, Marine Forces Reserve has mitigated risk to maintenance readiness in two ways. First, by continually refining the Training Allowance, which is the portion of the unit's full Table of Equipment kept on-hand at the Reserve Training Center. Our goal is to balance the minimum amount of equipment necessary to effectively conduct training with the amount of equipment that can reasonably be maintained within the personnel and fiscal resource constraints. Second, by leveraging Overseas Contingency Operations (OCO) dollars to pay for mobile maintenance support teams from Marine Corps Logistics Command to travel to Reserve Training Centers and augment the limited organic maintenance capacity. However, as the demand for Reserve Component Forces has significantly increased – from 126 exercises, missions, and operations in Fiscal Year (FY) 2017 to 149 scheduled for FY 2018 – we anticipate increased usage,

and subsequent wear and tear on both our military and individual combat equipment sets. Consequently, our maintenance requirements, demand for secondary repairables, and replenishment of gear have out-paced previous forecasts. Congressional support for our amended FY 2018 Operations and Maintenance, Marine Corps Reserve budget request, to include OCO, is paramount to our continued success in maintaining high equipment readiness.

The top procurement priority of the Marine Corps Reserve is the KC-130J Super Hercules. The Active Component has fully fielded the KC-130J Super Hercules. However, the remaining 17 of 24 Reserve Component KC-130J aircraft are not scheduled to be fully fielded until 2026. This extended fielding timeline forces the Reserve Component to simultaneously operate the KC-130J and the legacy KC-130T aircraft over the next eight years. These two aircraft have vastly different logistics, maintenance, and aircrew requirements, resulting in an increased outlay of resources to maintain the readiness of the Reserve Component KC-130 Squadrons.

Training

Marine Forces Reserve participates in the service-level ITX aboard Marine Corps Air-Ground Combat Center, Twentynine Palms, California. This exercise consists of two battalions conducting live-fire and maneuver exercises, featuring Reserve Component Forces from the Marine Air-Ground Task Force elements. This is one of the few opportunities that the ground, aviation, and logistics combat elements, under the command of a regimental headquarters, are able to come together and coordinate all warfighting actions to operate as a Marine Air-Ground Task Force under live fire and maneuver conditions. The ITX is constantly updated to challenge our Reserve Force with the most realistic training possible. Units participate based on future activation potential per the Marine Forces Reserve FYs 2018-2022 Training and Readiness Plan. The ITX provides all Marine Air-Ground Task Force elements an opportunity to undergo a service-level

assessment of core competencies that are essential to expeditionary, forward-deployed operations.

Additionally, individuals serving on the regimental command element staff receive training that ensures the ability to augment a Marine Air-Ground Task Force and/or a Joint staff. In summary, the ITX improves combat readiness, efficiency in Total Force integration, and enables more rapid activation response times at the battalion and squadron level.

Marine Forces Reserve maximizes participation in continental United States-based training events. In FY 2017, Reserve Component Marines and Sailors participated in Exercise Northern Strike, a joint, combined-arms, live-fire exercise emphasizing close air support, joint fire support, and coordinated maneuver with fires. The exercise also provides highly sought after amphibious training that is executed aboard Camp Grayling, Michigan, at the Joint Maneuver Training Center. Exercise Northern Strike provides an opportunity for Reserve Marines to train alongside Army and Michigan Air National Guard forces, as well as Canadian forces, and has become an integral part of the Reserve Component training continuum. These types of exercises ensure our Marines maintain the highest levels of proficiency and readiness to integrate with the Active Component to support the requirements of the combatant commanders.

In order to preserve fiscal and materiel resources and test the limits of expected operations, we also maximize training efficiencies by optimizing the use of training simulators wherever possible. Our Reserve Training Centers employ the Indoor Simulated Marksmanship Trainers (ISMTs) and other simulation to ensure Reserve Marines are trained to the same tasks, conditions, and standards as the Active Component. The ISMTs particularly benefit remote site locations that are distant from DoD training ranges by eliminating wasted time of traveling long distances to training areas. Additionally, with Reserve units only having 38 training days per FY to train to

mission essential tasks and also ensure all Service mandated annual training requirements are satisfied, it is essential for the Marine Corps Reserve to capitalize on non-traditional training methods such as online training. Expanding our use of simulators and online training will preserve valuable training time and also enable units to make the most of that limited training time during drill weekends.

Facilities

Marine Forces Reserve occupies facilities in 47 states, the District of Columbia, and the Commonwealth of Puerto Rico. These facilities include 27 owned and 133 tenant Reserve Training Centers, three family housing sites, one permanent barracks, three emergency troop housing barracks, and one General Officer Quarters. Although some sites are located on major DoD installations, most are situated within civilian communities, ranging from neighborhoods to industrial and commercial districts. We continue to improve the maintenance and security of our facilities to ensure the safety of our Marines and Sailors and provide an effective training and mobilization platform to support the readiness of the Force.

Sixty-six percent of the facilities budget supports the sustainment and maintenance of existing infrastructure and operating cost of providing day-to-day facilities support. However, those operating costs steadily increase with the age of the buildings. We have improved the overall readiness of our facilities inventory through our Facilities Sustainment, Restoration and Modernization (FSRM) support program and maximized the impact of our budget through divestiture and demolition of excess footprint.

There has been a focused and ongoing effort to improve overall force protection at all of our sites by working with our service partners and the National Guard for joint occupied facilities. Numerous protection assessments and security engineering reports have been conducted at our

facilities to assist and develop designs to mitigate protection concerns, specifically physical security. These assessments have identified physical security requirements and served to prioritize security enhancements to ensure our sites and Marines are secure in the facilities where they work and drill. We have leveraged additional funding to address these requirements and the risks are mitigated by the tactics, techniques, and procedures that each individual unit employs.

The Marine Corps' Military Construction, Naval Reserve (MCNR) program focuses on providing construction for new and enduring capabilities, as well as recapitalization of our aging existing facilities. The construction provided by the annual authorization and appropriation of MCNR funding is an important factor in advancing our facilities support mission as we optimize our force laydown throughout the nation. Continued support for the MCNR request is essential as we divest of failing infrastructure and modernize capabilities.

The combined effects of our targeted consolidation, FSRM, and MCNR programs have steadily reduced the number of inadequate or substandard Reserve Training Centers and enabled better support to the Force. Continued support for our annual funding request for our facilities program will enable us to improve the overall physical infrastructure that reinforces the mission readiness of our units.

Health Services and Behavioral Health

Marine leaders have a moral obligation to ensure the health and wellness of the Nation's Marine Corps Reservists, Sailors under our charge, and their families. General Dunford once said "This nation's most precious assets are the young men and women in uniform," – we take this responsibility seriously. Every day, we strive to maintain the trust and confidence of Congress and the American people by immediately addressing any challenge to our readiness and finding solutions through our people and readiness programs.

We strive to improve medical readiness through a robust Post-Deployment Health Reassessment (PDHRA) Program within Marine Forces Reserve and an accurate monitoring, identification, and notification of the unit-level actions necessary to attain readiness goals. Between deployments, our Health Services priority is to ensure the DoD goal of 85 percent Total Force Medically Ready. During FY 2017, Marine Forces Reserve met that goal with individual medical and dental readiness rates of 85.4 percent and 90.7 percent, respectively. Additionally, our Health Services personnel participate in Force Readiness Assistance & Assessment Program unit inspections and audits which provide oversight at unit level and the ability to monitor policy adherence and readiness.

The Reserve Health Readiness Program (RHRP) has greatly increased overall medical and dental readiness throughout the Force. This program funds contracted civilian medical and dental providers to units that do not have organic medical or dental support personnel and/or are not supported by a military treatment facility. During FY 2017, the RHRP performed 21,762 Periodic Health Assessments; 22,354 Mental Health Assessments; 1,098 PDHRAs; 331 immunizations; 6,349 laboratory services; 14,055 audio services; and 17,220 dental procedures. In addition to RHRP, the Marine Corps' comprehensive behavioral health program addresses issues such as substance abuse prevention, suicide prevention, combat and operational stress control, domestic violence, and child abuse prevention.

Marine Forces Reserve conducts Operational Stress Control and Readiness training at all levels. It is provided during pre-deployment training to service members of units deploying for more than 90 days, as well as all commands in garrison. The purpose of this training is to provide the requisite knowledge, skills, and tools to assist commanders in preventing, identifying, and managing combat and operational stress concerns as early as possible.

The Navy Bureau of Medicine and Surgery supports behavioral health through various independent contracted programs, such as the PDHRA and the Psychological Health Outreach Program (PHOP). The PDHRA places an emphasis on identifying physical, behavioral, and mental health concerns that may have emerged since returning from deployment. During CY 2017, Marine Forces Reserve successfully raised current completion totals to nearly 37,100 PDHRA screenings. The PHOP addresses both post-deployment behavioral health concerns and crisis-related interventions through contractors with various social work-related backgrounds via a wide array of referral services in the community to include follow-up with service members. These programs provide a pathway to identify Marines, Sailors, and their families that are in need of behavioral health assistance, and an avenue to seek behavioral health assistance.

Signs of operational and combat stress can manifest long after a service member returns home from deployment. This delayed onset of symptoms presents particular challenges to Reservists who may be isolated from vital medical care and the daily support network inherent in active duty units. Encouraging Marines to acknowledge and vocalize mental health issues is a continuing challenge facing our commanders. We address the stigma associated with mental health care through key programs, such as the Yellow Ribbon Reintegration Program (YRRP). Further, we market all of our behavioral health initiatives and programs through our Marine Forces Reserve portal website and during key Marine Corps forums throughout the year. Your continued support of our behavioral health programs is greatly appreciated.

Marine Forces Reserve Drug Demand Reduction Program (DDRP) focuses on reducing illegal drug use and prescription drug misuse within the Reserve community. Marine Forces Reserve relies profoundly on its drug-testing program, which acts as a powerful deterrent against drug use. Each Reserve unit conducts monthly random, yet, compulsory drug testing that ensures

systematic screening of all Reservists for the presence of drugs. The DDRP staff provides quarterly and on demand education and awareness training on the dangers of misusing and abusing prescription drugs and information on the proper disposal of old, unused, and outdated medications. Additionally, the DDRP increases leaders' awareness on the dangers of abusing prescription drugs through annual substance abuse supervisory level training.

Suicide prevention is a high priority for the Marine Corps. Marine Forces Reserve focuses its suicide prevention efforts on six initiatives: in-theater assessments, PDHRA, PHOP, Care Management Teams, Marine Intercept Program (MIP), and Unit Marine Awareness and Prevention Integration Training (UMAPIT). The in-theater assessments target Reservists who may be exhibiting or struggling with clinically-significant issues during a deployment. These Marines are evaluated by appropriate medical authorities for possible treatment with follow-up decisions made prior to the return home. The PDHRA program specifically seeks to identify issues that emerge after Reservists have returned home from deployment. The PHOP secures treatment referrals and provides essential follow-up treatment and case management for our service members to receive appropriate behavioral health services. MIP is an evidence-informed targeted intervention for active duty service members who have had an identified suicide ideation and/or suicide attempt. MIP includes a series of telephonic voluntary caring contacts in which a counselor reaches out to the Marine and assesses for risk, encourages use of a safety plan, identifies and addresses any barriers to services. The MIP counselors then incorporate these caring contacts into the counseling process. These services are also provided to our Reserve Marines through the PHOP. Lastly, UMAPIT provides mandatory face-to-face annual training for every Marine and Sailor in our command and is based on evidence-informed practices to raise awareness of common risk factors and warning signs associated with behavioral health issues.

Additionally, our Reservists and their family members are able to access Marine Corps installations' behavioral health programs through Marine Corps Community Services while they are on active-duty orders. When not on active-duty orders, Military OneSource provides counseling, resources, and support to Reserve service members and their families anywhere in the world. The Marine Corps DSTRESS Line is another resource available to all Reserve Marines, attached Sailors, and family members regardless of their duty status. DSTRESS is a 24/7/365, Marine-specific crisis call and support center, providing phone, chat, and video-telephone capability for non-medical, short-term, solution-focused counseling and briefings.

Sexual Assault Prevention & Response

Sexual assault is a complex problem that is often interrelated with other readiness challenges, behavioral health issues, and destructive behaviors. Marine Forces Reserve remains focused on executing solutions to address the continuum of destructive behaviors, with the goal of eliminating sexual assault within our ranks. To accomplish this goal, Marine Forces Reserve has expanded the Sexual Assault Prevention and Response Program (SAPR) to seven full-time employees who provide supportive services across the geographically-dispersed force. In addition to the Force-level Sexual Assault Response Coordinator (SARC), each Major Subordinate Command within Marine Forces Reserve has a SARC who manages their commanding general's SAPR Program from the headquarters office in New Orleans. Together with the SARCs, two professional civilian victim advocates are available to support service members and adult family members located at all 160 sites who may need SAPR services. Marine Forces Reserve continues to increase victim services, improve victim response capabilities, and emphasize prevention.

The SAPR staff trains up to 160 new Uniformed Victim Advocates (UVAs) each year during week-long courses held at the Marine Corps Support Facility, New Orleans. After training

and credentialing through the DoD's Sexual Assault Advocate Certification Program, uniformed advocates are appointed by their commanders to serve in this collateral duty billet at their respective Reserve Training Centers. Each SARC provides continuous support and guidance to the geographically-dispersed Victim Advocates within their MSC. In total, Marine Forces Reserve's SAPR Program maintains a roster of more than 300 UVAs within the Reserve Component.

Reserve members can report an assault at any time and do not have to wait to be performing active service or inactive duty for training to initiate their report. Service members are eligible to receive timely access to SAPR advocacy services from a SARC and a UVA regardless of when a reported incident of sexual assault took place, to include those that occurred prior to service or while not in a drilling status. They also have access to a Victim's Legal Counsel regardless of the duty status of the individual if the circumstances of the reported offense have a nexus to the military service of the victim.

UVAs respond to service members regardless of their activation status, as well as adult dependents who make a report of sexual assault. With the support of their SARC, UVAs screen for potential safety issues and provide required safety updates, offer ongoing supportive services and referrals, and maintain a data base of nationwide resources for victims of sexual assault who may not reside on or near an installation. The SARCs and UVAs collaborate with providers who are local to the sites to create a network of support and response capabilities for the Reserve Component across the nation.

Another essential aspect of the response protocol is the 24 hours a day, seven days a week Support Line that is advertised to service members and their families via written and digital media and during all SAPR classes and briefs. The Support Line is manned by the professional SAPR

staff members who serve as a readily accessible resource for those who need anything from immediate assistance to those with questions about how to make a report. Marine Forces Reserve also actively publicizes the DoD Safe Helpline which offers the crisis support service for members of the DoD community affected by sexual assault. The DoD Safe Helpline is available 24/7 worldwide with “click.call.text” user options and can be used anonymously for confidential support.

Our prevention strategy is holistic and integrated with other programs that support the eradication effort, such as the Equal Opportunity Program, Family Readiness, Spiritual Readiness Initiatives and Behavioral Health. Marine Forces Reserve emphasizes setting the example of discipline and respect at all levels of command by encouraging a positive, retaliation-free, command climate. Leadership is encouraged to actively engage with our Marines and Sailors to learn what we can do to further support a positive environment that is free from attitudes and behaviors that are incompatible with our core values. All Marines and Sailors are required to receive SAPR training every year to ensure widespread knowledge about the program to include both prevention and response information. Preventative education plays a role as all non-commissioned officers receive “Take a Stand” bystander intervention training and all junior Marines participate in the “Step Up” bystander intervention training each year.

Marine Forces Reserve is committed to preventing sexual assault while responding with the highest quality of supportive services and advocacy to those who need it.

Quality of Life

We are committed to ensuring quality of life support programs that are designed to help all Marines, Sailors and their families, whether they are deployed or on the home front. Reserve Marines and their families deserve the very best support in return for their sacrifices. They are

dispersed throughout the country and away from the traditional brick and mortar support systems of our major bases and stations. Therefore, we strive to provide awareness of, and access to, the numerous support programs available for their benefit. Marine Corps Community Services and unit Family Readiness Officers provide a vital link to ensuring support reaches those who need it.

Marine Forces Reserve tracks the submission of medical service treatment records to ensure Reserve Component Marines receive timely access to Department of Veterans' Affairs (VA) health care services. Working across all 160 sites, we aggressively target our performance for submission timeliness to ensure our Marines will not be delayed in their submission of VA disability benefit claims once they have separated from the service.

Marine and Family Readiness Programs remain flexible, constantly adjusting to meet the needs of our Marines and their families. The result is a ready and resilient Force, well equipped to achieve success. This heightened state of resiliency is primarily achieved by providing robust, relevant and standardized training to our unit commanders, Family Readiness Command Teams, Marines and their families. Our Marine Corps Family Team Building (MCFTB) program offers non-clinical primary and secondary preventative education and professional training to support service members and their families throughout mission, life, and career events - ultimately enhancing unit mission readiness. MCFTB training events are delivered both, in person and through interactive webinars, at Marine Corps units across the United States. During FY 2017, Marine Forces Reserve conducted 194 training events at which 6,821 Marines and family members received valuable information to prepare for upcoming deployments, thrive during a deployment, and achieve a positive post-deployment reintegration experience.

A key component to our quality of life and resiliency is the religious ministry support provided by the 220 Religious Ministry Team (RMT) members consisting of Navy Chaplains and

Religious Program Specialists who are integrated into our support structure. As Uniformed Members, RMTs support Marines and their families across the full spectrum of military life including combat and humanitarian engagements. 123 RMT personnel are embedded in 46 Marine Corps Reserve units and 97 are in Navy Reserve religious support units that directly support Active Component Marine Corps units. Of those, 14 are mobilized in support of combatant commanders across the globe. This support includes developing the Commandant's spiritual readiness initiatives, providing divine services across the spectrum of faith communities, advising on spiritual and ethical matters, and pastoral care in a safe, confidential environment.

One signature program is the Chaplain Religious Enrichment Development Operations (CREDO) program. The CREDO program provides two transformational workshops: the Marriage Enrichment Retreat and the Personal Resiliency Retreat. These events equip Marines, Sailors, and their families with practical relationship and communication tools that strengthen marriages and individual resilience while on the home front and during deployments. The PRR curriculum also helps Marines and Sailors set personal goals, make good decisions, deal with stress, and live lives with greater purpose and satisfaction. During FY 2017, ten Marriage Enrichment Retreats were conducted with 290 participants and two Personal Resiliency Retreats were conducted with 26 participants.

The Marine Corps Personal and Professional Development programs continue to provide training and educational resources to service members and their families. The Transition Readiness Program implements a comprehensive transition and employment assistance program for Marines and their families; the program emphasizes a proactive approach that will enable Marines to formulate effective post-transition entrepreneurship, employment, and educational goals. Transition Readiness is a process that occurs across the Marine for Life Cycle, not an event

that occurs at a single point in time. Additionally, the Marine For Life Network provides education and awareness briefs to Reserve Marines and their family members during IRR Mobilization Exercises, with the intent to link them to employment, education, and community resources in support of their overall life goals.

Our Semper Fit program remains fully engaged in partnering with our bases and stations to provide quality, results-based education and conditioning protocols for our Marines and Sailors. The High Intensity Tactical Training program includes hands-on, science-based strength and conditioning courses, online physical fitness tools, mobile applications for service members to access anywhere, recorded webinars, as well as instruction on injury prevention, nutrition, and weight management. Our Marines' and Sailors' quality of life is also enhanced through stress management and *esprit de corps* activities, such as unit outings and participation in competitive events. These programs are crucial to unit cohesion and camaraderie.

The YRRP is an invaluable partner with the Marine Corps Unit, Personal, and Family Readiness Program at every command level. Since its inception during 2010, the YRRP has held more than 850 training events for more than 39,000 Marines, Sailors, and family members. In FY 2017, 123 YRRP training events were conducted with 1,958 participants. The YRRP is a tool for commanders to remain engaged with the challenges and issues facing Marines, Sailors, and their families. The YRRP continues to thrive. Marine Forces Reserve, with the assistance of our Marine Corps Team Building, local and national resources, has many methods for program delivery that are sustainable in any fiscal or deployment climate. This includes local unit events, webinars which can be delivered nationally, mail-outs, social media, and personalized briefs designed to meet the individual needs of the service member and family.

We continue to be supportive of Military OneSource, which provides our Marines, Sailors,

and their families with an around-the-clock information and referral service via toll-free telephone and internet resources. Additionally, Military OneSource provides information on subjects such as parenting, child care, education, finances, deployment, and relocation.

Our Marines, Sailors, and their families, who sacrifice so much for our Nation's defense, should not be asked to sacrifice quality of life. We will continue to be a faithful advocate for robust Family Programs and Services that evolve and adapt to the changing needs of our Marines, Sailors and their families. The combined effect of these programs and services are critical to the readiness and retention of our Marines, Sailors, and their families, and your continued support is greatly appreciated.

Supporting our Wounded, Ill, or Injured Marines and their Families

The Marine Corps ensures the availability of full spectrum care to all wounded, ill, or injured (WII) service members, whether they are Active or Reserve, through the Wounded Warrior Regiment (WWR). Marine Forces Reserve ensures Reserve Marines' unique challenges are addressed through a WWR Liaison Officer who provides subject matter expertise and special coordination with the WWR staff.

The WWR staff includes the Reserve Medical Entitlements Determinations Section, which maintains specific oversight of all Reservists requiring medical care for service-incurred and duty-limiting medical conditions. Reservists facing complex care and recovery needs have access to WWR's network of 45 Recovery Care Coordinators who provide one-on-one transition support and resource identification for WII Reservists and families often living long distances from military installations. WWR also has medical advocates at the regimental staff who are available to assist Reservists in need of medical care coordination and advocacy. District Injured Support Coordinators and Field Support Representatives dispersed throughout the country also coordinate

with Reserve units to ensure we keep faith with all Marines.

Marine Forces Reserve will not forget the sacrifices our Marines have made for this great Nation; and we will continue to work with the WWR to establish resources and programs that address the unique and ongoing needs of our Reserve population.

Conclusion

Despite the challenges facing us in today's strategic environment, the Marine Corps remains our Nation's crisis response force and will continue to be most ready when our Nation is least ready. When our Nation calls, the American people expect quick, decisive action from Marines – both the Active and Reserve Components. As part of the Marine Corps Total Force, the Marine Corps Reserve must remain manned, trained, and equipped to provide lethal forces to the Active Component to respond across the operational spectrum from disaster relief to full scale combat operations. Despite today's unstable operating environment being further complicated by budget uncertainty, it is essential for us to remain engaged in current operations, maintain our warfighting readiness, and reset our equipment – while also taking the necessary strides to modernize the force. With your continued unwavering support, we will make pragmatic decisions on how to best balance our available resources between current commitments and future readiness requirements.

Semper Fidelis!

Ms. GRANGER. Thank you.

SUMMARY STATEMENT OF GENERAL MILLER

General MILLER. Chairwoman Granger, Ranking Member Vis-closky, and members of the subcommittee, I am honored to be here today to have the opportunity to report on the state of America's Air Force Reserve. Today I am joined by Command Chief Master Sergeant Erica Kelly, Command Chief for the Air Force Reserve.

At any given moment on any day, there are over 6,500 Active citizen airmen stationed stateside and deployed around the world, all supporting our Nation's defense. There is no distinction between our Active Guard and Reserve airmen. We are lethal, and we are privileged to defend this great Nation. We are honored to serve alongside our joint partners and our allies and ready to make the ultimate sacrifice for our country.

During last year's posture hearing, I spoke about the pilot and maintenance retention challenge that we faced. During the fight line—today, the flight line manning for our part-time force of citizen air remains very strong. It is nearly 100 percent. However, the steady demand on airline pilots and civilian industry aircraft maintainers continues to impact retention for our full-time technician force.

In response to these challenges, we continue to pursue the use of bonuses, incentive pays, and special salary rates for our pilots and our maintenance force. Though this approach has positively impacted retention, it may not be sufficient for the long term—for the long-term solution. We need to continue to discuss either full-time options with you all and incentives with your staff, and we need to garner support for these options to improve our manning over time.

Our Nation's Air Force Reserve is a strong resilient force of airmen, civilians, and contractors. We are postured to ensure we preserve our foundational strength, providing that daily operational capability and strategic depth for which our Nation demands. We will continue to sharpen our edge for the fights and improve our readiness to win any time, anywhere.

We are focused to recruit critical talent and retain critical skills to expand our competitive edge across all missions. America's Air Force Reserve continues to treasure and to strengthen the bond between the citizens of our Nation and the airmen who answer the call to defend our freedoms.

I am honored to represent all of our airmen and their loved ones today. And I thank this committee for your enduring support. And I look forward to your questions. Thank you.

[The written statement of General Miller follows.]

United States Air Force



Testimony

Before the House Appropriations
Subcommittee on Defense

Guard and Reserve Hearing

Statement of
Lieutenant General Maryanne Miller
Chief of Air Force Reserve

April 12, 2018

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Subcommittee on Defense

Air Force Reserve Posture Statement

April 12, 2018

**BIOGRAPHY****UNITED STATES AIR FORCE****LIEUTENANT GENERAL MARYANNE MILLER**

Lt. Gen. Maryanne Miller is the Chief of Air Force Reserve, Headquarters U.S. Air Force, Washington, D.C., and Commander, Air Force Reserve Command, Robins Air Force Base, Georgia. As Chief of Air Force Reserve, she serves as principal adviser on reserve matters to the Secretary of the Air Force and the Air Force Chief of Staff. As commander of Air Force Reserve Command, she has full responsibility for the supervision of all U.S. Air Force Reserve units around the world.

General Miller was commissioned in 1981 as a distinguished graduate of the ROTC program at The Ohio State University. She is a command pilot with more than 4,800 flying hours in numerous aircraft.



The general has commanded two wings and held numerous staff positions at the unit, air staff and joint staff levels. Prior to her current assignment, she was the deputy to the Chief of Air Force Reserve, Headquarters United States Air Force, Washington, D.C.

EDUCATION

- 1981 Bachelor of Arts degree in criminal justice (minor in sociology,) The Ohio State University, Columbus, Ohio
- 1983 Squadron Officer School, Maxwell AFB, Ala.
- 1986 Flight Safety Officer School, Norton AFB, Calif.
- 1994 Air Command and Staff College, Maxwell AFB, Ala.
- 2004 Air War College, by correspondence
- 2006 Director of Mobility Forces Course, Hurlburt Field, Fla.
- 2009 Senior Reserve Component Officers Course, Army War College, Carlisle, Pa.
- 2011 Seminar XXI, Center for International Studies, Massachusetts Institute for Technology, Washington D.C.
- 2011 Master's degree in business administration, Trident University, Calif.
- 2012 Senior Executives in National and International Security, Harvard Kennedy School of Government, Cambridge, Mass.
- 2017 Senior Joint Information Operations Applications Course, Air University, Curtis E. LeMay Center for

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Doctrine Development and Education, Maxwell AFB, Ala.

ASSIGNMENTS

1. September 1981 - August 1982, Student, undergraduate pilot training, Williams AFB, Ariz.
2. August 1982 - March 1983, Student, pilot instructor training, Randolph AFB, Texas
3. March 1983 - July 1984, T-37 Instructor Pilot and RSU supervisor, Williams AFB, Ariz.
4. July 1984 - January 1985, T-37 Check Pilot and RSU Supervisor, Williams AFB, Ariz.
5. January 1985 - March 1985, Student, Squadron Officer School, Maxwell AFB, Ala.
6. March 1985 - February 1986, Executive Officer for 96th FTS Commander, T-37 Instructor Pilot, Williams AFB, Ariz.
7. February 1986 - July 1986, Student, distinguished graduate C-141 training, Altus AFB, Okla.
8. July 1986 - July 1987, C-141 Aircraft Commander and Executive Officer for 8th Airlift Squadron Commander, McChord AFB, Wash.
9. July 1987 - June 1988, C-141 Instructor Pilot, 8th Airlift Squadron McChord AFB, Wash.
10. June 1988 - July 1989, Chief of Flying Safety and C-141 Examiner Pilot, McChord AFB, Wash.
11. July 1989 - September 1993, C-141 Examiner Pilot, 313th Airlift Squadron, McChord AFB, Wash.
12. September 1993 - April 1994, Deputy Operations Group Commander, 459th Airlift Wing, Andrews AFB, Md.
13. April 1994 - October 1995, Operations Officer, 756th Airlift Squadron, Andrews AFB, Md.
14. October 1995 - October 1996, Chief, Strategic Airlift, Reserve Operations, Headquarters U.S. Air Force, Washington, D.C.
15. October 1996 - January 1998, Fighter Forces Programmer, Reserve Plans and Programs, Headquarters U.S. Air Force, Washington, D.C.
16. January 1998 - December 2001, Operations Officer and Deputy Operations Group Commander, 459th Airlift Wing, Andrews AFB, Md.
17. December 2001 - May 2004, Air Reserve Technician C-5 pilot, Dover AFB, Del.
18. May 2004 - January 2006, Operations Group Commander, 932nd Airlift Wing, Scott AFB, Ill.
19. January 2006 - January 2008, Commander, 932nd Airlift Wing, Scott AFB, Ill.
20. January 2008 - November 2009, Commander, 349th Air Mobility Wing, Travis AFB, Calif.
21. November 2009 - January 2012, Director of Programs and Requirements, Office of the Air Force Reserve, Headquarters U.S. Air Force, Washington, D.C.
22. January 2012 - September 2013, Deputy Director of Partnership Strategy, J5, the Pentagon, Washington, D.C.
23. April 2012 - August 2012, Interim Deputy Director for Trans Regional Policy, J5, the Pentagon, Washington, D.C.
24. September 2013 - July 2016, Deputy to the Chief of Air Force Reserve, Headquarters U.S. Air Force, Washington, D.C.
25. July 2016 - present, Chief of Air Force Reserve, Headquarters U.S. Air Force, Washington, D.C., and Commander of Air Force Reserve Command, Robins AFB, Ga.

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SUMMARY OF JOINT ASSIGNMENTS

1. January 2012 - September 2013, Deputy Director of Partnership Strategy, J5, the Pentagon, Washington, D.C., as a brigadier general and a major general

FLIGHT INFORMATION

Rating: Command pilot

Flight hours: More than 4,800

Aircraft flown: T-37, T-38, C-141B/C, C-5A/B, C-9A/C, C-40C, KC-10A and C-17

MAJOR AWARDS AND DECORATIONS

Defense Superior Service Medal

Legion of Merit with two oak leaf clusters

Meritorious Service Medal with four oak leaf clusters

Aerial Achievement Medal

Air Force Commendation Medal

Air Force Achievement Medal

EFFECTIVE DATES OF PROMOTION

Second Lieutenant June 12, 1981

First Lieutenant Aug. 30, 1983

Captain Aug. 30, 1985

Major March 5, 1992

Lieutenant Colonel June 13, 1996

Colonel Feb. 17, 2005

Brigadier General June 1, 2009

Major General Jan. 1, 2013

Lieutenant General July 15, 2016

(Current as of January 2018)

STRATEGIC ENVIRONMENT

America's Air Force Reserve, an essential and integral component of the United States Air Force, faces a more complex and demanding environment than we have seen in generations. Great power competition has reemerged as the central challenge to U.S. prosperity and security and our relative advantage in air and space is eroding.

As a Major Command growing back to 70,000 Airmen, the Air Force Reserve stands ready, as a principle contributor in all Combatant Command areas of responsibility, and in response to those who challenge U.S. prosperity and security. As a Major Command with Airmen rich in combat experience and years of engagement in conflict zones, our strength is still our seasoned talent, steeped in experience and postured for ready response.

Aligned and postured with the National Defense Strategy, we are building an even more lethal and ready force, strengthening alliances and partnerships, and continuing to deliver greater, more affordable results across the domains of war. We are tailoring our Command to the right size and mix of agile capabilities to *compete, deter, and win* in joint and combined warfare.

AMERICA'S AIR FORCE RESERVE IN DEMAND

The Reserve is indispensable day to day in every joint force operation, with over 6,500 Airmen serving on full-time orders around the world in all core missions of the Air Force. Our first responsibility is to integrate seamlessly with unmatched lethality as an equal member of the Total Force.

The Reserve is integral in all five Air Force core missions by providing:

AIR AND SPACE SUPERIORITY ... freedom from attack and freedom to attack. As we continue to build a lethal force, we are emboldened by years of combat experience. The talent of Reserve Citizen Airmen in dominating air and space domains, distinguishes America's Reserve as *high threat* in any aggressor's risk calculus.

GLOBAL STRIKE ... any target, any time. Over 1,000 Reserve Citizen Airmen and their bombers project nuclear deterrence and strike lethality across the globe as a counter to inter-state strategic competition and terrorism.

RAPID GLOBAL MOBILITY ... delivery on demand. The Reserve's 24,000 Airmen contributing to Air Mobility solidifies our Air Force's ability to frustrate the adversaries efforts and preclude their options while expanding our own, selecting the time and place of our choosing as the world's most resilient and agile air mobility force.

INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (ISR) ... global eyes and ears on adversaries. The Fiscal Year 2018 Reserve focus, in response to the joint warfighter demand, establishes a new ISR Wing, 2 ISR Groups, 14 Intelligence squadrons, and adds 9 intelligence targeteers – supporting all four layers of the National Defense Strategy *Global Operating Model*.

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COMMAND AND CONTROL ... right info, right person, right time. America's Air Force Reserve holds a critical role in Total Force command and control, employing three squadrons dedicated to Combatant Command's Air Operation Center's steady state and surge activities – employing the AN/USQ-163 Falconer Air and Space Operations (AOC) Weapons System and directly supporting service and joint staffs. These units ensure both Pacific and Central Commands are postured with command, control, and communications capabilities that project joint force lethality.

AMERICA'S RESERVE ALIGNED WITH AIR FORCE STRATEGIC DIRECTION

The Air Force Reserve budget request of \$5.1 billion for Fiscal Year 2019, builds on the progress made in 2018, to amplify the readiness of the force, project lethality, and cost-effectively modernize. Sustaining these efforts requires predictable, sufficient, and flexible budgets.

In alignment with our Service and National Defense Strategy, our budget prioritizes long-term readiness supporting Air Force Reserve contributions in the Pacific and European theaters. Our Reserve focus continues to be readiness through theater specific training sets and weapon system modernization that addresses increased peer competition in today and tomorrow's battle space.

Associations with our Active Component remain the foundational organizational construct of our Air Force Reserve where two thirds of all Air Force associations reside. Associations ensure we continue to capture seasoned active airmen for continued service, leverage scarce resources in organizational efficiencies and improve our lethality through shared training and combat experiences. The bottom line is that Association models leverage unique strengths of each component to capitalize on recruitment, retention and readiness.

CONTINUING EFFORTS

Some elements of this budget **continue** programs and strategies that are underway:

AMPLIFY READINESS: America's Air Force Reserve always trains to the same standards and maintains the same level of readiness as the Active Component. We balance our baseline budget of a Strategic Reserve with the day-to-day operational demands of our force. We are in an age of constant global competition where the Air Force Reserve, while funded as a strategic resource, is essential as a daily operational contributor. We are reviewing opportunities to change the strategic model of "part time – full time" Airmen to leverage Reserve operational lethality without breaking strategic readiness.

PEOPLE: Reserve readiness requires manpower end-strength commensurate with global demand. In Fiscal Year 2019, we seek an increase of 200 positions, primarily to support Force Protection and Special Operations Intelligence growth areas. As we increase the base of Reserve Citizen Airmen, our personnel programs must adapt as well. As a retention initiative in our critically manned pilot and maintainer community, we will continue to propose a change in law to allow Tricare Reserve Select for our Title 5 Air Reserve

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Technicians. This effort, along with a rebalance of full-time support across our squadrons, will bolster recruiting and retention in critical skills areas.

NUCLEAR DETERRENCE: Central to the projection of Total Force nuclear response, the Reserve is postured in disciplined readiness with B-52 aircrews as a key enterprise contributor. The initiative to develop replacement engines for the B-52 will capitalize on the lethality of this proven aircraft and the seasoned Reserve Citizen Airmen that employ them.

SPACE SUPERIORITY: We have 11 space units in America's Air Force Reserve which align under Air Combat Command and Air Force Space Command - 10 Classic Associations and 1 national level association. Our Classic Association partnership supporting the Space Test and Training Range at Schriever Air Force Base ensures readiness of the only range of its kind in the Defense Department. Increased budget proposals led to an overall increase of 55 positions throughout the 26th Space Aggressor Squadron.

MULTI-DOMAIN COMMAND AND CONTROL: The Air Force budget proposal focused on modernizing seven E-3 Airborne Warning and Control System (AWACS) aircraft will continue to ensure our Airmen in our Classic Association unit stand ready to employ one of the world's most sophisticated Command and Control resources.

AIR SUPERIORITY: Years of seasoned combat experience are a hallmark of America's Air Force Reserve Citizen Airmen who fly the most sophisticated 5th generation fighters in the world. The Air Force five-year plan and associated Fiscal Year 19 budget capitalizes on the Reserve's seasoned experience by directly increasing the overall manpower within our F-35 schoolhouse by 72 positions, enhancing electronic warfare, and control of the electromagnetic spectrum across the air superiority enterprise.

BUDGET PRIORITIES

IMPROVING WARFIGHTING READINESS: Readiness is first and foremost about having enough trained people. We are recruiting to 343 pilot and 2,143 maintainer vacancies. To expedite recruitment, we increased pilot training selection boards from two per year to six per year; in maintenance, Office of Personnel Management delegated Direct Hiring Authority to the Office of the Secretary of Defense to reduce accession times.

As we continue to bolster our lethality, we leverage five major levers of readiness; Critical Skills availability, Training Resource availability, Weapon System sustainment, Flying Hour Program, and Operations and Personnel Tempo. The flexibility in balance between levers of readiness gives the business model its strength, as each lever is mutually supporting.

Funding for Weapon System Sustainment in the Fiscal Year 2019 budget accounts for 76% of the program's baseline. Leveraging of Overseas Contingency Operations (OCO) funding increases our program to 83% of our baseline request. The Air Force Reserve seeks a stable and predictable budget by reducing reliance on OCO funding and increasing our baseline budget. The Reserve capacity to execute additional increase in our baseline exists with the retention of

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the A-10, C130H and the KC-135 and associated costs in system sustainment of these mature platforms.

In the Flying Hour Program, we seek a \$49.7M increase from Fiscal Year 18 – a total of \$739,194,000. This increase ensures sufficient funding of higher cost C-17 hours as one of our wings converts from C-130s to C-17s. It also adds flying hours in support of the buyback of two, eventually eight, C-5 aircraft. Additionally, hours are added for the fielding of the KC-46 program. The budget increase supports the capacity of Reserve resources (aircrew, maintenance, and aircraft) to execute the Flying Hour Program.

STRENGTHENING ALLIANCES: The Air Force Reserve, in alignment with the Total Force, will continue to build on our efforts to assist our allies and partners in times of peace and war. The diversity of our Reserve Citizen Airmen remains a unique and valuable attribute to maturing existing and future partnerships and alliances. America's Air Force Reserve hosts one of the nation's top Foreign Military Sales training wings led by Citizen Airmen. The wing refines partner and ally nation's fighter pilots and maintainers into a robust constellation of lethality ready to prevail in conflict and preserve peace through strength.

CONCLUSION:

The Air Force Reserve will remain an integrated, flexible, and lethal force of Airmen indispensable to the fight across the domains and across the globe. We continue to build and shape our combat force for the future ever focused and always vigilant of the reemergence of great power competition. Thank you for your tremendous support of America's Air Force Reserve.

Ms. GRANGER. We will start with Ms. McCollum.

PUERTO RICO

Ms. MCCOLLUM of Minnesota. Thank you, Madam Chair.

I know people will ask about readiness and modernization and will submit that for the record for all of you, but I want to follow up on a conversation I just had with the National Guard in Puerto Rico. And, by the way, when you come to Minneapolis-St. Paul, the forecast will be 38, but it will be sunny. We still have snow on the ground.

General LUCKEY. I heard it is getting colder, too.

Ms. MCCOLLUM of Minnesota. Yeah. You don't want to come Sunday. So, General Luckey, if I could just talk to you for a second about Puerto Rico. I had the opportunity of being with the Fish and Wildlife and EPA, but I was also with the Park Service and the Forest Service. And I was with a gentleman from the Forest Service who is going to be retiring shortly but also continues to serve in the Army Reserve, and so we had a great conversation, and I made it about personal struggles that they are having in Puerto Rico being in the Guard, being in the Reserve, and at the same time, the Federal responsibilities that Fish and Wildlife, Park Service, EPA; you wouldn't believe what our Federal employees were doing down there to help with the recovery.

Park Service, actually, at one of the forts had people, supplies, and some of the police from Puerto Rico had their equipment in there to protect it. So I want to make sure that you have what you need because we have another hurricane season coming up. Generators, supplies, equipment, equipment that might be on a wish list to help with some of the things going down there.

And so, along with the economy, the stress on the Reserve Components down there, not only taking care of their family, their community, and then fulfilling their responsibilities as they are called up to help their fellow American citizens. Can you just kind of tell me what we need to be doing down there to help you be ready? Hurricane season is coming quickly. I think this needs to be a priority.

General LUCKEY. So, Congresswoman McCollum, thanks for the question, and it is great to see you again. So just to sort of level—I was in Puerto Rico last weekend for a couple reasons, one of which was to go back—as you know, I was there about 6 weeks after Maria hit, and so I have been keeping a very close eye on the situation. As you know, we have thousands of Army Reserve soldiers, family members down there.

Also, one of my installations, as you know, Army Reserve installations, Fort Buchanan is there and, frankly, played a key role as a platform to support a lot of activities there very early on. So let me assure you, first of all, that I am paying very close attention to this situation both in terms of how we are recovering from what happened and also preparing for what is possibly going to happen next.

In fact, the ranking member and I talked about this yesterday briefly. So, from an investment strategy perspective, in terms of reconstituting resilience and capability, as I touched on a minute ago in my opening remarks, looking at investment strategy to not only

reconstitute particularly the spot power generation and water-purification capabilities—to some extent, we have stressed mightily, as you well know, over the last 9 to 10 months—but, in addition, to reconstitute but actually increasing the capacity of us to be able to reassemble and surge that capability on even a larger scale than we did last year.

As you know, in the course of literally weeks following the storm, the senior leader on the island for the Federal perspective, the senior military leader on the island, was an Army Reserve general. I don't know if you met General Dusty Schultz, when you were down there. She commands the 1st MSC. We, under my command authorities as the commanding general of the Army Reserve, placed all forces in both the Virgin Islands and Puerto Rico under her control so she could retask, organize as required to get after things, acknowledging that, in some cases, our soldiers were so—their lives were so disrupted that they didn't have the ability to help their neighbors because they had to help themselves. But over half of the force that we had in Puerto Rico was able to rise to the challenge and help their partners out.

So, from the financial perspective, I think I am okay, frankly, thanks to your help. Thanks to this committee's help, I have been able to reprioritize, within the NGREA funding that we had, to prioritize some funding to get back at that resilience, particularly in Puerto Rico and the Virgin Islands.

I would acknowledge the Virgin Islands were devastated very much, as you well know. I am confident that we are paying very close attention. One more thing, and I don't want to take all your time, but one other thing I want you to know. I am also very cognizant of the fact that, as we continue to pursue Federal missions—so, for instance, the 210th RSG, Regional Support Group, that is going to be going to Fort Bliss, Texas, this fall to support an Army mission at Fort Bliss. I am very cognizant and I talked to a lot of family members who are very concerned about if another storm hit, would their servicemember be able to come home? I reassured them that we would manage every one of these issues one soldier at a time, one family at a time. But you have my strongest assurance that I am paying very close attention to the situation. I am very sensitive to the concerns that you raised.

Ms. MCCOLLUM of Minnesota. Thank you, Madam Chair.

My next stop is the Virgin Islands. I didn't want to—not focus on each one together, but individually. So thank you, I will follow up before I go there with you.

Ms. GRANGER. Mr. Diaz-Balart.

READINESS

Mr. DIAZ-BALART. Thank you very much, Madam Chairman.

It is good to see all of you and thank you for your service.

I want to talk a little bit about—the chairwoman, when she began, she mentioned the tragedy, right, that took place recently. And so there have been some reports that potentially there is a connection between some of the accidents taking place and, frankly, the inadequate funding that was taking place.

So I would really kind of like to hear from you about whether you think that there is a potential connection between inadequate

funding to things like these—some of these tragic accidents that have taken place, and also your impressions of where we are now with the 2018 omnibus—and, obviously, we are already starting the 2019 bill—and where do you see the potential for readiness, for training, et cetera. So if you would just—and I don't know who wants to—maybe start with the Air Force since that is the most recent tragedy.

General MILLER. Yes. Thank you, Congressman.

I do not think it is related to the budget stress. We—actually, the Air Force Reserve is going to be the investigating officer on that accident in Afghanistan.

And, thank you, Madam Chairwoman, for your response or your condolences to Bill Posch and to Carl Enis and his family, so thank you for that.

I don't think it is connected. We are looking in—as an Air Force and an Air Force Reserve, we are looking at—there has been a slight increase in category C mishaps, which are the lesser mishaps due to the cost threshold, and are looking into that, just digging a little bit deeper as to why.

But I don't think that the crash in Afghanistan is related to the budget stress that we have had. And I think, you know, readiness overall, if you look at 2018 compared to 2019, you know, 2018 was that boost that we needed. And thank you very much for all of the money that came to us in the 2018, in this execution year to get after readiness. We are making incredible strides at the unit level. We have 47,000 folks in the unit, getting after the mission every day, across every mission set, and we have used every dollar that we have been given to actually get up on the plateau as fast as we can. And for the remainder of 2018 and the increase in funding that we are getting for 2019, we will continue that climb toward lethality, which the National Defense Strategy demands from us.

So the airmen are excited about actually being able to do the job that they signed up for. We have actually told them: You can stop doing certain—for the next 6 months you can put these things aside and you can get after readiness.

So thank you for the increase in the 2018. 2019, as I said, just gets us further down the path of readiness. In the Air Force Reserve, we have \$50 more million dollars for flying hours, particularly in the C-17 and the C-5, which helps tremendously for the readiness.

WSS, we are funded at 76 percent baseline; 83 when you add OCO. So thank you for that OCO boost to get us up there. We will fully execute that 83 percent. And then we are focusing on recruiting the critical talent that we need and of course retaining the critical skills. So it is all about recruiting retention and the readiness. So thank you for the money.

Our concern is really the next 2 years. We look at it as 2 years of money, and then we are going to do everything we can full throttle, as our Secretary says, to get after the readiness now, because in 2 years, we are not sure what that is going to look like, so we are giving it everything we can right now. So thank you, Congressman.

Ms. GRANGER. Mr. Ryan.

Mr. RYAN. Thank you, Madam Chair.

Thank you for your service. We know what an essential part of the team you all are, and we want to thank you for your service over the last couple of decades. We know how much strain has been put on you in sequestration, and we apologize for that.

General Miller, as my favorite panelist, because you are from Ohio. I have a couple questions, and I want to first say thank you for being so engaged with the air base in Youngstown, Ohio, and our mission there, the aerial spray mission that is essential for the Reserve.

Can you talk to us a little bit about the—of course, I am going to ask about the C-130Js, and if you could give us a little bit of your analysis on where we are and kind of where we need to be, and maybe what the demands are?

General MILLER. Yes. When you look at the overall Air Force tactical airlift numbers, 300 is what we need. And the H's—the current structure that we have is 300. We are programmed to keep 300. And the Air Force right now—we do not have J models built into the program to recapitalize the H's. We have put money into increment 1 and 2—amp 1 and 2. And we are progressing very well with that. Amp 1 is actually completed funded. Amp 2 is actually funded in the FYDP also.

So we are getting after all the amp 1 adjustments that need to be completed by 2020, and then, by 2028, all the amp 2 will be done. So the H's will be fully ready to fly, fully capable of flying anywhere in the world to do their mission.

PILOT RETENTION

Mr. RYAN. Two quicks question. One for you, General Miller, and one for Mr. Luckey on retention. I am worried about the pilot retention issue, and I am worried about the cyber talent retention and recruitment that we need.

So, General Miller, if you could go first and talk a little bit about the challenges you may be having with a very competitive commercial pilot industry competing with the men and women we are trying to go after.

General MILLER. For the Air Force Reserve, our pilot manning on the part-time force, which is the majority of airline pilots. I mean, that part-time force, I would say 98 percent of them fly in the airlines. We are manned at 96.5 percent.

So I have the pilots on the part-time force to go do the mission if we are called. It is the full-time force that we are stressed. We are manned at 68 percent. I have brought that manning up to 72 percent on the full-time side. So to get after the full-time deficit that we have, the gap, I am looking at putting a different full-time status in many of our mission sets, and that is called Active Guard and Reserve. So that AGR status is different than the Air Reserve technician status because it allows USERRA return rights.

So an airline pilot can go fly with the airlines for a couple of years, come do us for a couple of years, and then return back to the airlines. So there is a great opportunity for them to just continue full time in both and just share time over a period of a couple

of years. So I am making that adjustment in the full-time support. I think that will bring the full-time support pilot numbers up into the low 80s, mid 80s, potentially, on the full-time side.

Mr. RYAN. Great. Thank you.
General Luckey.

General LUCKEY. Congressman, very quickly, thank you for the support.

First of all, from a flying perspective, only 94 percent [inaudible] I am frankly not concerned about that.

On the cyber thing, I will turn it a little. I actually think that the Army Reserve presents a tremendous opportunity, and I think I talked about this last year. We are actually moving forces up to recapture talent, both from the [inaudible] perspective in force but also to retain those soldiers coming off Active Duty who typically—as you touched upon—who are going to find much more financial incentive to go into the private sector and continue this work. And great opportunity [inaudible]—we are moving force structure to a different—I call it the digital [inaudible] Training in America where we capture and retain that talent and keep it as part of the force on a part-time basis, and it is very—

Mr. RYAN. Great. I yield back.

Admiral MCCOLLUM. Congressman, if I could just add one other point, if I may. We know that pilots are the happiest when they having flying hours and platforms to fly in. The Navy Reserve is very focused on maintaining a viable recapitalization to allow that so we can capture that return on investment if an Active pilot leaves to the Reserve, somewhere \$8 million to \$9 million at the 8-year point. So we are very focused, viable platforms recapitalized to give them the opportunity to continue to serve.

Mr. RYAN. Thank you, Admiral.
Ms. GRANGER. Mrs. Roby.

RESPONSE AUTHORITIES TO NATIONAL DISASTERS

Mrs. ROBY. Thank you, Madam Chair.

And to the whole panel. A big thank you to each of you and your families for your great service to our country. We appreciate each of you. So thank you for being here this morning.

General Luckey, clearly as a Nation, I know it has been touched on a little bit, we have endured major national disasters since you were here last year. Hurricanes have ravaged Texas, Louisiana, Florida, the Virgin Islands, Puerto Rico, and even parts of Alabama. So, in the wake of Katrina, Congress took action to provide immediate response authority to response forces.

So I wanted to see if you would be willing to comment on those authorities, and do we have it right in terms of providing the Reserve with the necessary authorities to provide domestic disaster response in a timely basis?

General LUCKEY. So, Congresswoman, first of all, thanks for the question. I got my mike on now; I apologize for that. Absolutely. This has been—I think it has been a game changer, and one very quick vignette, and I don't want to take all your time on this. But as Harvey gathered energy in the Gulf, I saw it literally—my wife Julie saw it on the iPad. She commented. We were driving across the country, going out to check on my brother who had been in-

jured, and called the TAG at Texas to ask them what they needed, and the TAG told me they needed hoist capable aircraft, which—and I have 38 of them in the Army Reserve.

So, based on that conversation, I was able to preposition aircraft in the Fort Worth area out of sort of the path of—the predicted path of the storm, proximate enough to the disaster site to immediately mass effects on that target area. So we moved aircraft—as an emergency deployment readiness operation, we moved aircraft, hoist aircraft from Colorado, we moved them out of Olathe, Kansas, CH-47s. We were able to move those capabilities, have them proximate and immediately be delivering effects, both in terms of rescuing folks, moving critical medical supplies, all kinds of commodities around that space.

Similar scenarios, although not so much aviation intensive, in both Puerto Rico and the Virgin Islands and Florida and Louisiana, as you touched upon.

It is a tremendous opportunity, frankly, for our soldiers, sailors, airmen, and marines to be able to respond where they live and/or move to support people in other places in the United States. So I think it is a game changer in terms of our ability to message and achieve effects immediately. So I appreciate it very much.

OPERATIONAL RESERVE

Mrs. ROBY. Thank you. And for the panel, and I don't have a whole lot of time left, but for the panel, given now that we have an operational reserve, I want to keep a close eye on the operations tempo for our Reserve forces.

Can you please comment on your assessment of the mission requirements for your service versus the size of our forces? Do we need a bigger Reserve? And what is your philosophy on the Individual Ready Reserve? Are we providing incentives and professional opportunities for people to stay? That is for whoever wants to jump in.

General MILLER. So I will start first here at this end. The operational reserve that we have today is, as you say, we are deeply in the fight all over the world. So the Reserve is really a strategic force that we have leveraged for the last 25 years as an operational force. The Reserve Forces Policy Board has done great strides in putting the right authorities in place, building the definition of an operational reserve, and lines of effort that go to identifying what an operational reserve is.

The piece that I think that I need—that we have yet to complete, is a little bit of full time on top of the strategic base that we have, because we are dipping in everyday to that strategic base and making demands on their time, which is great, which is what we do. But after 25 years, our folks are getting stressed.

So I am manned at 17 to 25 percent full time; I need a little bit more. The Guard is roughly at 32 percent. So, across my Air Force Reserve, I am putting enablers in the support and the operations piece to get after that full-time support. Otherwise, we are in a good position.

General McMILLIAN. Ma'am, if I could weigh in here for just 1 minute. In we are right sized in the Marine Corps Reserve. The number one question that I get from my Reserves: When do we get

to go to that fight, whatever that fight is? So they are motivated, and they are ready to be engaged in operations.

Ms. GRANGER. Thank you.

Ms. Kaptur.

F-35 FOR THE RESERVES

Ms. KAPTUR. Thank you all for being here today.

I wanted to begin with General Miller. During the last round of F-35 fielding, the State of Ohio narrowly missed the F-35 cut. Is the Air Force intending to begin another round of F-35 fielding to the Reserves, and if so, when will that occur?

General MILLER. Yes. Currently, we have a preferred alternative of Fort Worth, and then our alternative bases—if Fort Worth is not selected, it would be either DM Homestead or Whiteman. So our four bases are firmly in the plan for the F-35. In 2019, the chief and Secretary will make the decision on if Fort Worth is that preferred alternative, if that is the base that we put them.

HEALTH SERVICES AND BEHAVIORAL HEALTH

Ms. KAPTUR. All right. I just wanted to say, across the spectrum this morning, I have read all of your testimony, and I believe General McMillian has the most complete section dealing with health services and behavioral health.

So I wanted to ask you, representing some Reserve Components myself, the 983rd Army was just deployed to the Middle East. How does your suicide rate compare to the military average, up or down, especially over the last year?

General LUCKEY. So let me jump on that first, if I may, Congresswoman. The suicide rate in the Army Reserve, frankly, has just recently ticked up above the Army average. And I will tell you—so, first of all, I can't prove this, but I will tell you, one of my concerns is that the financial aspect of stress on families is, in many cases, particularly acute for those families or soldiers that have had multiple deployments, may have stressors with their employers, and have come back from deployments and either be unemployed or under employed. So we are targeting our private-public partnership program to ensure that those soldiers who are identified as at-risk financially get additional support in finding jobs.

I can't prove that there is a nexus between financial stressors and self-destructive behavior, but I am targeting that population specifically to get after the challenge.

Ms. KAPTUR. One interesting fact I learned this morning, if you go to many of our large bases, even in this country—and I am not talking about Reserve Components—but you will see predatory lenders all wrapped around the bases. And this financial issue is really a very critical one that I think we need to—we would welcome your recommendations based on what you know.

Could I ask, General McMillian, what about the Marine Reserve?

General McMILLIAN. Yes, ma'am. Thank you for the question. Last year, we had 12 suicides in the Marine Corps Reserves. This year, we are at five, so not quite at 50 percent, but trending in that direction. The majority—the vast majority of our suicides occur in a nondrilling status, in between drill weekends when we don't have

eyes on them, when the Marine reservist is out in the community with their families and working in their civilian jobs.

We do an indepth analysis after each suicide, and we have come to the conclusion that each one of those suicides touches one of three areas: number one, financial problems in the civilian sector; number two, relationship problems; and, number three, legal problems. Some of those all together; some of those by themselves. But each one ties into that.

So, when we see them on our drill weekends, we have what we call kneecap-to-kneecap, eyeball-to-eyeball leadership and mentoring sessions with them, and also we stay in touch with them in between their drills to see how they are doing. We are exercising that small unit leadership to Nth degree to try to keep them on the straight and level, so to speak, ma'am.

Ms. KAPTUR. I appreciate your careful monitoring of who they are. And I would just suggest, if it—it could help us help you, in Special Forces with the chair a few months ago, we saw where Special Forces had embedded behavioral specialists in each unit, and they had brought their suicide rate down to the military average.

Reservists are scattered all over the place. They come home often to no base. Maybe they report into a headquarters, but then they are off somewhere.

Admiral McCollum, you talk about mobile technologies within the Navy—Naval Reserve being available for different things. I really have been wondering about mobile technologies where we could take the best medicine we have or they could take apps or we would connect them so they wouldn't be so far away from care.

I have actually have been present at a Reserve base where units come home, and I have seen soldiers that are in need of care immediately. It isn't available. So it is kind of messy when it gets back to the local level. I would appreciate your summary for us, or meeting with those of us who care about this, how we can better bring that care to them and whether we need to fund additional behavioral specialists within the Reserve or pay for the medical education, but it is a need across the military.

I even want to take the technologies, if we have them, to the Ukraine, because I see what is happening at the front there with soldiers there. And I don't think we have got this thing pinned down completely, and we could do much better. But you have got elements of the solution within your testimonies today and from your own personal knowledge.

So, Madam Chair, I wanted to highlight this arena of behavioral health, and in 5 minutes, you can't even touch the surface. But is there any way that you could summarize what you know and report back to us on ways in which we could better help you help the soldier? Thank you.

Ms. GRANGER. Thank you.

Mr. Visclosky.

HOSTILE WORK ENVIRONMENT

Mr. VISCOSKY. Thank you, Madam Chair. I just want to talk for a few minutes about a societal problem that at this late date remains breathtaking, I think, to all of us. It is also evident in the

military, but I think the military has a special responsibility, and that is sexual assault and hostile work environment.

We are all familiar with these statistics, particularly the one that reporting has increased 240 percent, according to a fiscal year 2016 report, since 2004, which would indicate potentially that people are more comfortable coming forward.

The question I have for each of you, though, is, with more people coming forward—I regret they have to—I am very worried about retaliation. We talk to people about forms of retaliation, and sometimes it is very ham-handed, and sometimes it is very subtle. How do each of you in your commands work down to that level that, listen, this is not too be tolerated and if somebody comes forward, they should not be the ones who are going to be punished here?

General LUCKEY. So, Ranking Member, if I may take that on. Just two thoughts. One, from a senior leadership perspective, obviously, it starts with me. So just be assured that this is—on multiple occasions, I have made it very clear. I am on Facebook, although I am not so sure I should be on Facebook anymore—

Mr. VISCOSKY. Well—

General LUCKEY [continuing]. And I am on Twitter, and I am on all these different social media. They are platforms that I use to try make sure that this message—so, in addition to the website for the Army Reserve, constantly messaging. I think it fairly stridently frankly. My position, our position: not in our squad, not in this team, not in America's Army Reserve.

I will tell you, from an assessment perspective, I watch this pretty carefully. This is the month for awareness, both sexual assault and sexual harassment. I just recently finished another climate survey for both my headquarters at Fort Bragg for the Army Reserve Command and also for the Office of the Chief of the Army Reserve here at Fort Belvoir and the Pentagon. I don't want to come across as overconfident about this, but I will tell you, statistically, of the things that I am concerned about in terms of inappropriate behavior, I would say the one that I keep a close eye on is nothing as explicit or as obvious as actual out and out assault or demeaning behavior; it is sort of more inappropriate language that sort of opens up the aperture for other sort of more—I don't want to say predatory, but just more inappropriate behavior, that somebody thinks it is okay to do this or okay to do that. I am very cognizant of that. I think we are attacking it fairly aggressively.

As to your reprisal concern, you know, I am always here to learn and come up and get better techniques, and I get them from my colleagues all the time. I will just tell you the most important thing I think I can do as a senior leader of the Army Reserve is message every day in every way that anybody who has anything that concerns them needs to bring this up to somebody that they trust in the chain of command or, not in the chain of command, but a sexual assault/sexual harassment adviser.

Admiral MCCOLLUM. In the Navy Reserve, it is similar to General Luckey's comment, every morning, I review any report where we have knowledge that a sexual assault has occurred. And in those discussions and in those reports, it is important for me to know, number one, the victim's situation. Do they have an advocate assigned?

RETALIATION

Mr. VISCOSKY. I understand on assault, but just, as the general said, you know, just language, the—but I am worried about retaliation. What happens after somebody reports? And are you worried about somebody—and again sometimes it can be very subtle. So it is just the retaliation. I—

Admiral MCCOLLUM. It is important that we know that—so retaliation itself is—what mechanism does the victim have, what tools to be protected against any indication of retaliation? They have an advocate that is assigned. I look by name who their advocate is. And then, in that context, is it—how restrictive, it is the victim's choice. Is it unrestrictive? It is the victim's choice. And with that awareness and with those dialogue, we can find out quickly if there is a profile of retaliatory, and we act on it, including if they request to be moved to another command.

Mr. VISCOSKY. So somebody would be assigned to them to be supportive and helpful—

Admiral MCCOLLUM. That is correct.

General McMILLIAN. Sir, in the Marine Corps, it starts with the Commandant, and we all get underneath the Commandant, and we are asked to provide—we are asked to provide superb leadership and morale in all of our units. If we are not doing that, then we are not doing our job. So everybody that is underneath me, I task them, their number one priority is to provide superb leadership and ensure all of our units have great morale. And if they can't provide that, then I call them accountable as the Commandant holds me accountable to provide that. We want to ensure that we have the trust and confidence of our Nation's most precious assets, which I mentioned in my verbal testimony, that we are charged with taking care of.

Now, tied in with that, we have found out through command climate surveys how our units were doing, and across the board, I think we are doing very well. It shows that they have trust and confidence in their leadership, and to tie that into sexual harassment and sexual assault, our reporting is up, and that is a good thing. And we see that as having trust in the leadership to investigate all of those claims and then hold people accountable. And we are going to do that for you. I am doing it for the Commandant, and I am sure he will—when he comes in to testify, he will tell you he is doing the same thing.

Mr. VISCOSKY. Is there someone that is, if you would, assigned to that person who comes forward?

General McMILLIAN. Yes, sir. They get a direct assignment to take care of their issue. Yes, sir.

General MILLER. Yeah, very similar to the Marine Corps, you know, it is about trust. And the victim needs to understand that we are there to support them and care, take care of them. If there is an issue or a perceived issue of retaliation, either one is important, and we need to jump on it and take care of it and hold the, you know, member accountable for that.

Mr. VISCOSKY. Thank you very much.

Thank you.

Ms. GRANGER. Ms. Kaptur.

Ms. KAPTUR. Yes, I just wanted to place a figure on the record. Though this is the Reserve panel, the prior panel on the Guard, last year, in the Guard, 132 soldiers committed suicide. The vast majority were Army Guard. So I would hope we would have the same figures. And that, by the way, is an increase. A very important issue. Thank you.

Ms. GRANGER. We have run out of time. I have an ask of you, not a question you need to answer today. But, you know, we have expressed some concern—there is such admiration for our Reservists and our Guard, and that is in every city that we are in and across the Nation and to make sure that they are cared for and that they have the support that they need. But the other thing we have heard about some employers who won't hire members of the Guard or Reserves because of the possibility of missed work due to their deployment. And as I have said early in the last panel, it has to be a respect and a contribution from employers and the employees who want to work and also serve in the Reserve or Guard. And so, if there is something else that needs to be done to mitigate this to make sure they are not discriminated in the workforce, would you please let us know that? And if there is anything else that Congress needs to do to help support our Guard and Reserves in their quest, it is very—the work they are doing is keeping us safe, and it is very important. So if you would get back with us, we would really appreciate that very much.

That concludes today's hearing. The subcommittee stands adjourned.

[CLERK'S NOTE.—Questions submitted by Mr. Aderholt and the answers thereto follow:]

HIGH MOBILITY MULTIPURPOSE WHEELED VEHICLES

Question. Currently, more than half of National Guard units' High Mobility Multipurpose Wheeled Vehicles (HMMWVs) are 15 years or older and beyond their useful life. Since FY2013, the Army National Guard HMMWV Modernization Program has been a partnership between the Army, National Guard Bureau, and industry which has delivered more than 2,600 modernized, like-new HMMWVs to National Guard units including 140 to my home State of Alabama. Does your FY 2019 Budget include funding to continue this program?

Answer. Yes, the Army National Guard (ARNG) anticipates that the Army will invest \$50M towards our HMMWV Modernization Program in FY 2019.

This funding level will bring the total modernization level to approximately 56% of the HMMWV fleet by the end of FY 2019 including 100% of both HMMWV Ambulances and TOW/ITAS variants.

The ARNG modernization strategy aligns with the Army's overall Tactical Wheeled Vehicle (TWV) strategy.

C-130H

Question. It is my understanding that the majority of the DoD's aging C-130H fleets are being replaced with newer C-130Js. However, while Air Mobility Command, Air Force Special Operations Command, Air Combat Command, U.S. Air Force Europe, U.S. Air Forces Pacific, the U.S. Marine Corp, U.S. Coast Guard, and the U.S. Navy all have plans to replace their aging legacy C-130 fleets with new C-130Js, the Guard and Air Force Reserve combat delivery fleet replacements are being deferred with no plans for replacements until these H models are 60+ years old. Do you have any concerns about how legacy Air National Guard and Air Force Reserve H model units will be maintained as the Total Force transitions towards ensuring interoperability through proportional and concurrent fielding of the latest equipment?

Answer. Having the Active Component but not the Reserve Component completely recapitalized in the C-130J creates challenges as logistical and training needs must

still be supported for the Guard and Reserve fleet. The National Guard Bureau supports full recapitalization of its C-130H fleet with C-130J's but is aware that, given the significant cost associated with full recapitalization, that continuing ongoing modernization of the Air National Guard's legacy C-130H's is necessary in the interim.

[CLERK'S NOTE.—End of questions submitted by Mr. Aderholt. Questions submitted by Mr. Visclosky and the answers thereto follow.]

EMPLOYER ACTIONS

Question. In recent Fiscal Years, how many complaints or actions have the Guard dealt with for employers not working with Guardsmen and deployment? Please provide a summary of the final outcomes for any actions taken against employers in that time frame.

Answer. The National Guard Bureau does not handle complaints regarding employers. Those are handled either by the Employer Support of the Guard and Reserve (ESGR) Ombudsman Services, the Department of Labor, or through private legal action.

ESGR is the lead DoD agency handling complaints about those employing Guard members. ESGR initiates mediation cases at the request of Service members who are experiencing a uniformed service-related conflict with their civilian employer. ESGR provides informal, neutral mediation in an effort to resolve employment-related conflicts before they escalate to the level of a Department of Labor investigation. However, ESGR does not have an enforcement role in regards to the Uniformed Services Employment and Reemployment Rights Act (USERRA) and therefore does not take any type of action against employers as a result of informal mediation. As a result, ESGR does not track outcomes for actions taken against employers. The Department of Labor may track this information.

The attachment details the number of requests for mediation services received by the ESGR National Customer Service Center from National Guard members for FY 2017 and thus far in 2018. These mediation cases are initiated at Service members' request.

Problem Type	2017	2018	Grand Total
Discrimination as Retaliation for any Action	22	6	28
Health Benefits	7	8	15
Initial Hiring Discrimination	33	19	52
Layoff	167	58	225
Military Obligation Discrimination	471	259	730
Other	35	8	43
Other Non-Seniority Benefits	7	2	9
Pay Rate	28	18	46
Pension	6	5	11
Promotion	35	3	38
Reasonable Accomodations / Retraining for Disabled	11	2	13
Reinstatement	144	45	189
Seniority	17	15	32
Status	9	7	16
Vacation	41	20	61
Grand Total	1033	475	1508

Row Labels	Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut
Discrimination as Retaliation for any Action	2		1				
Health Benefits						1	2
Initial Hiring Discrimination		1				2	1
Layoff	4	1	1	4	9	2	4
Military Obligation Discrimination	15	1	17	13	39	5	8
Other	1				3		1
Other Non-Seniority Benefits							
Pay Rate			1		4	2	
Pension							
Promotion			1		4		1
Reasonable Accommodations / Retraining for Disabled				1			
Reinstatement	4	3	5	12	2	2	
Seniority					4	4	2
Status			1				
Vacation		1	2	1	3	1	
Grand Total	27	3	27	24	78	19	21

Delaware	District of Columbia	Florida	Georgia	Guam	Hawaii	HQ ESGR	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana
		1		1						2	1		1
									1	2	1	1	
		2	3	1	1		2	4	1				
		1	10	10	1	1	3	11	12	2		4	6
2	6	34	28	6	6		9	30	32	14	11	8	17
								4	1	2		1	2
		1	1		1					1			
		2	1				2				1		1
		1											
		2		1	1				1	2			
		3	1						1				
3	2	6	7	2	2	3	2	8	3	4	2	2	
				2				2	1		1	1	
				1					1			2	
1	1	2	1					1	2	3	2	1	
6	15	64	53	13	10	2	17	58	65	26	20	19	35

Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey
				1	1	1	1	1			1
			1	1	2	2			2		
			4	1	4	11	6	8	2	1	1
1	17	17	19	17	15	17	3	7	14	2	3
										3	19
										2	
				1							
	2		1	7	2	1			2		1
1			1	2						1	
1			1	1		1		1			1
				1							
5	4	5	4	3		1	5	2	6		5
										1	
				1		2					
	3	2	4	5	3	2				2	
1	32	26	39	47	34	36	9	16	23	15	33

New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Puerto Rico	Rhode Island	South Carolina
		4		2				1	1	1
2	3	1	1			1		1	1	2
5	11	5		13	5	4		6	2	3
15	26	22	1	25	7	8	41	13	1	8
2	2			2	1	1	3			
		1					1			
					2			1		
1	3	1		1		1		2		2
	1	1		1				1		
1	4	7	1	12	3	1		8	6	2
1	3	2		2				2		
				1				2		
1	1	1		3	1			1		
29	55	45	3	62	19	16	71	24	1	19

South Dakota	Tennessee	Texas	Utah	Vermont	Virgin Islands	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Grand Total
1		2				1		1		1	28
	1										15
1		4				3			2		52
1	10	17	1			3	5		4		225
4	23	28	10			18	14	5	7	4	730
		5	1			1	1	1	1		43
		1						1			9
2	3	3				2			1		46
	1	1							1		11
	1	1	1			1	1				38
		1									13
1	1	10	4			1	6	5		2	189
		1	2	1							32
		1					2		1		16
1	1	3	1			1	1		1		61
11	42	79	18	1	1	38	28	8	21	4	1508

FULL TIME SUPPORT

Question. Please provide the subcommittee with a breakdown of the manning levels for soldiers and airman on Active Guard and Reserve Status for the Army and Air Guard. If additional full time support is required, please provide the subcommittee with a detailed budgetary proposal.

Answer.

ARMY NATIONAL GUARD

Congress authorizes and funds 30,155 ARNG soldiers on Active Guard and Reserve (AGR) status and 27,107 Military Technicians and Title 5 National Guard Employees to organize, administer, train, maintain, recruit and instruct Army National Guard units. This is about 64% of the 89,559 full-time manpower requirement set by the Army for the Army National Guard.

Additional full-time support is needed to achieve Army readiness goals. The FY19 President's Budget includes a request for an additional 440 AGRs, which would alleviate recruiting shortfalls. The 440 AGRs will cost \$23,529,000 the first year and \$47,059,000 per year in subsequent years.

Over the long term, growing ARNG full-time support to 80% of the manpower requirement and focusing that into key units will facilitate interoperability with the Total Force and build readiness. If such an increase were spread over ten years, it would require adding approximately 1,000 AGRs per year at a cost growth of about \$120 million per year. The National Guard Bureau continues to work with the Army to right-size full-time support programs to provide ready units to support global and domestic requirements.

AIR NATIONAL GUARD

Full-time requirements on ANG Unit Manning Documents are only 87% funded in the FY19 budget request across the ANG; this results in 6,785 unfunded requirements. An additional \$104M per year would raise funding from 87% to 95% of the requirement and address critical training and readiness gaps across the ANG.

Additionally, the ANG is reshaping its fulltime mix of AGRs and Technicians. ANG's budgetary proposal for FY19 converts 3,190 (14%) of programmed ANG dual status technicians to AGR (272 Officers/2,918 Enlisted). The ANG's submission is a targeted, disciplined approach aimed at solidifying our competitive advantage (e.g., primary focus: aircraft maintenance, cyber support, intel and operations), which aligns with the National Defense Strategy. In addition, the conversions from technician to AGR make the ANG a more attractive option to cross-component transfers because former active duty and/or new AGR members would experience no change in benefits or compensation from active duty status, thereby benefiting the Total Force's capability and capacity.

NATIONAL GUARD BORDER MISSION

Question. General Lengyel, what day were you informed of the new policy relative to use of the National Guard on the southwest border?

Answer. Sir, I was notified of the desire to augment Customs and Border protection with National Guard troops on 4 April 2018. Immediately after that notification the National Guard Bureau was a full participant in DoD working groups and meetings to execute the guidance from the President and meet the needs of the Department of Homeland Security.

[CLERK'S NOTE.—End of questions submitted by Mr. Visclosky. Questions submitted by Mr. Cuellar and the answers thereto follow:]

SOUTHWEST BORDER OPERATIONS

Question. What is the scale and scope of the "call up" expected to meet the presidential mandate of sending troops to the Southwest Border and what kind of troop activities can be expected for the National Guard presence on the border?

Answer. Up to 4,000 National Guard personnel have been authorized to support the Department of Homeland Security Customs and Border Protection (DHS/CBP) through September 30, 2018. Just over one half of the total authorized personnel have been approved for deployment in support of requests for assistance (RFA) from DHS/CBP. The Department of Defense vets the types of activities performed based on DHS/CBP RFAs. Approved activities so far include: light helicopter support; motor transport operations; motor transport maintenance; heavy equipment operations; vegetation clearing; surveillance support (Aerostat surveillance system with

crew and camera operators); geospatial and criminal analysis; training administration and operations planning; administration/clerical; paralegal administration; radio communications.

READINESS AND TRAINING

Question. What kind of Readiness and Training opportunities will this (Southwest Border Mission) provide for National Guard troops? Will this fill any critical training requirements not currently being met?

Answer. The Department of Homeland Security (DHS)/Customs and Border Protection (CBP) Southwest Border (SWB) security mission provides training opportunities at the individual and crew levels. National Guard volunteers supporting the DHS/CBP SWB security mission will be afforded additional training and practice in the logistics, engineering, intelligence, operations/planning, administration, training, and command and control functions.

SOUTHWEST BORDER DEPLOYMENT SCHEDULES

Question. General Lengyel, as with most operational support, units strive for predictability. This allows for a more sound training and maintenance schedule and has proven to have a positive effect on morale. What this focus on predictability, are these supporting Southwest Border Operations units going to follow a deployment cycle? How long will these units remain in place once deployed to the border?

Answer. Support to the Department of Homeland Security/Customs and Border Protection Southwest Border (SWB) security mission is being sourced on a voluntary basis. The Secretary of Defense has authorized up to 4,000 National Guard personnel through September 30, 2018. The length of individual SWB support will vary up to 179 days. At this time, the SWB security support is only authorized through September 30th.

READINESS

Question. It's been said that the Services have been spread pretty thin when trying to cover too much ground. With the recent Omnibus, the DoD is able to rebuild the manning levels but this will take time. How well will the National Guard be able to adapt at supporting Southwest Border operations, continue to provide combat-ready troops and support to the Combatant Commanders in the Middle East, and conduct disaster relief when called upon?

Answer. There are currently over 445,000 members in the National Guard (NG). The 4,000 National Guard members authorized to support the Department of Homeland Security's (DHS) border security mission represents less than 1% of the NG. Each of the requests for assistance from DHS are reviewed for their readiness impact to the Department of Defense global missions. Since NG personnel volunteer for the border mission with the consent of their respective governors, each state can retain the personnel necessary to respond to emergencies. Should States' response capabilities be overwhelmed, they may seek a presidential emergency or major disaster declaration, and the Federal Emergency Management Agency (FEMA) will coordinate Federal support, to include DoD support, to the affected State(s).

SOUTHWEST BORDER INTER-DEPARTMENTAL INTEGRATION

Question. Does the Guard anticipate issues, like Command and Control, and mission creep with DHS (for the Southwest Border Mission)? Does this create a problem with inter-departmental integration?

Answer. The National Guard Bureau has worked closely with the Department of Homeland Security (DHS)/Customs and Border Protection (CBP) to ensure that Requests for Assistance (RFAs) comply with the guidelines set by the Secretary of Defense's Border Security Support Cell and the Joint Chiefs of Staff Execution Order. All RFAs for National Guard (NG) support are approved by the Secretary of Defense. This will ensure that the NG role in this mission appropriately fulfills DHS/CBP requirements, thus enhancing inter-department integration while guarding against mission creep. Local command and control of participating NG will be accomplished with CBP sectors through state-controlled NG joint task forces assigned to the sector concerned.

ARMY GUARD APACHES

Question. Currently, Army National Guard Apache battalions are operating at 75% of aircraft requirements. It seems as though building a capable and deployable Guard battalion is done by robbing three Attack Battalions to create one 100% bat-

talion. Is this an acceptable readiness shortfall? And if not, what actions are being taken to ensure units designated to deploy are fully ready and what is the plan to address this shortfall of the Army Guard Apache Battalion aircraft?

Answer. The ARNG is required to move aircraft among four battalions in order to support a deploying Apache battalion. A deploying unit takes a full complement of 24 aircraft and leaves non-deployed units with less aircraft. Units down the deployment schedule may be left with only a handful of aircraft for training while the deploying battalion and the next battalion to deploy are brought to full strength. This prevents consistent training and makes it impossible to deploy all four Apache battalions at the same time in the event of an emergency. The Army is supportive of equipping our battalions to 100%.

AIRCRAFT ENGINE MAINTENANCE

Question. The National Guard has taken a much larger role in its aircraft engine maintenance. Will this FY19 budget support this added workload and allow the Guard to meet the maintenance demand for this depot-level maintenance?

Answer. The FY19 budget allows the ANG to fund existing requirements for field level repair and overhaul. Air Force Materiel Command retains responsibility for all “depot-level” maintenance.

RELIEF IN PLACE/TRANSFER OF AUTHORITY

Question. How long is the RIP/TOA (Relief in Place/Transfer of Authority) expected to last per rotation for the units deploying to the Southwest Border?

Answer. The NG personnel supporting CBP will go through a Joint Reception Staging Onward Movement and Integration (JRSOI) process to integrate into their missions assigned. The average JRSOI time will be approximately 7 days for most of the personnel and slightly longer for aviation personnel due to the nature of the certifications required prior to conducting their missions.

SOUTHWEST BORDER GUARD UNITS

Question. Are the units deploying to the Southwest Border, Guard units that would otherwise be dormant or that historically function as in-garrison support units but are now taking on new roles outside of their traditional scope?

Answer. The National Guard (NG) historically has been called upon to perform domestic support missions that are not the national defense missions they are organized for. The NG volunteers supporting the Department of Homeland Security/Customs and Border Protection security mission on the Southwest Border do not belong to dormant units. They belong to units that train for national defense missions.

ARNG ARBs

Question. What is the plan and what are you doing to ensure ARNG ARBs have the ability to train under the same conditions to meet the same task and standard as their Active Duty counterparts?

Answer. The first step is coordination with U.S. Force Command to draft a tentative deployment schedule. Then NGB coordinates with the appropriate U.S. Combatant Commands, First Army and the ARBs to draft a resource and training plan. ARNG ARBs then undergo training under the same conditions and to meet the same standards as their Active Duty counterparts prior to deployment.

END STRENGTH

Question. Texas is currently overdriving to help the National Guard Bureau meet its overall end strength, and has for more than 10 years. When will this effort result in additional force structure, along with the corresponding full-time manning, equipment and support personnel?

Answer.

ARMY NATIONAL GUARD

Prior to Congressional action arresting the decline in Total Army endstrength, the Army National Guard (ARNG) was programmed to decline to an end strength of 335,000. As part of that decline, the TXARNG was directed to divest the 72nd Infantry Brigade Combat Team, a combat formation of more than 4,000 Soldiers. After receiving Congressional support for an ARNG endstrength of 343,500, the Army, working with National Guard Bureau, retained the 72nd Infantry Brigade Combat Team (IBCT). Additionally, as the Army grows Security Force Assistance Brigades

(SFAB), the TXARNG received part of the National Guard's SFAB and was directed to field an additional Field Artillery Battalion beyond its existing force structure.

The Army National Guard, through its General Office Advisory Councils made up of state TAGs, is actively developing options for rebalancing force structure across the country to move missions and units to available manpower. The Director, ARNG will use the input of these councils to ensure states, like Texas, that have shown the ability to field more force structure are first in line when the ARNG grows or rebalances the force.

NGB has made additional full time manning for the ARNG a priority and is engaging the Army seeking an increase. The ARNG is at 64% of its full time support requirement. Increasing this support to closer to 80% of the requirement, approximately equivalent to 20% of the ARNG end strength, is seen as crucial to raising readiness and relieving stress on units, particularly high demand combat formations like the 72nd IBCT and the 1-149th Attack Reconnaissance Battalion.

AIR NATIONAL GUARD

The Texas Air National Guard has done an outstanding job meeting recruiting and retention goals. In fact, because TX has such strong recruiting, to help address the Air Force's pilot shortage, NGB added six aircraft and increased the fulltime manpower authorizations at the 149th Fighter Wing by 98. The Air Force has stated its desire to grow end strength over the Future Year Defense Program and began doing so in fiscal year 2018. The Air National Guard is part of that effort and expects commensurate growth in coming years. Manpower requests in the FY19 President's Budget underlie a plan to place five more full-time authorizations in the Texas Air National Guard.

[CLERK'S NOTE.—End of questions submitted by Mr. Cuellar.]

WEDNESDAY, APRIL 25, 2018.

**FISCAL YEAR 2019 DEPARTMENT OF DEFENSE
OVERVIEW BUDGET**

WITNESSES

**HON. JAMES N. MATTIS, SECRETARY OF DEFENSE
GENERAL JOSEPH F. DUNFORD, USMC, CHAIRMAN, JOINT CHIEFS OF
STAFF
DAVID NORQUIST, UNDER SECRETARY OF DEFENSE (COMPTROLLER)**

OPENING STATEMENT OF CHAIRMAN GRANGER

Ms. GRANGER. The Subcommittee on Defense will come to order. This morning, the subcommittee will hold a hearing on the Department's fiscal year 2019 budget request.

Before we proceed, I would like to recognize Ranking Member Mr. Visclosky for a motion.

Mr. VISCLOSEKY. Madam Chair, I move that those portions of the hearing today which involve classified material be held in executive session because of the classification of the material to be discussed.

Ms. GRANGER. So ordered. Thank you.

We are delighted to have Secretary James Mattis and General Joseph Dunford, Chairman of the Joint Chiefs, with us this afternoon. Alongside the Secretary and the Chairman is Mr. David Norquist, the Comptroller and Chief Financial Officer of the Department.

Thank you all for being here today.

Mr. Secretary and General Dunford, this subcommittee appreciates the partnership we share with you. This relationship is incredibly important. When we received increased funding for fiscal year 2018, we were able to ensure that your priorities and those of the service chiefs were all funded. I wanted to take this opportunity to thank you for the open lines of communication. It was extraordinarily helpful.

Mr. Secretary, the subcommittee very much appreciates your recent briefing to us on the new National Defense Strategy. This strategic framework you laid out was tremendously important as we completed work on the Department's fiscal year 2018 appropriations. We were able to make a critically needed downpayment to begin to rebuild our military in line with the strategy.

We look forward to hearing from you both today on how the fiscal year 2019 budget will build upon the progress we have begun to make and what more needs to be done to ensure we are prepared for the fights we face today and in the future.

Mr. Secretary, as we have often discussed, you are leading the Department at one of the most challenging times in recent history. Our Nation is facing threats from bad actors across the globe. It is our responsibility to ensure that you have what you need to do

the difficult tasks you have been given. The subcommittee relies on you, our military experts, to help guide us in the work that we do. We look forward to hearing from you both on your needs both now and in the future.

Before we begin your remarks, I yield to the ranking member, Mr. Peter Visclosky, for his comments.

Mr. VISCLOSEKY. Gentlemen, thank you for your attendance today. I look forward to your testimony.

Madam Chair, thank you.

Ms. GRANGER. Thank you. I would remind all members that this briefing is being held at the Top Secret level and none of the information shared here today should leave the room.

Mr. Secretary and General Dunford, unfortunately, we are going to be interrupted by a vote series shortly. In the interest of time, Mr. Secretary, we would appreciate it if you could both limit your opening statement to brief remarks. This would allow us to conclude the opening remarks before we recess for votes and move straight to questions as soon as we return.

Mr. Secretary, please proceed with your remarks. I am sorry for talking so fast. I am trying to get everything done before they call us out. Can you tell? It is the same old thing I say every time, so don't worry about it.

Mrs. Lowey.

Mrs. LOWEY. No opening remarks.

Ms. GRANGER. Okay.

Mrs. LOWEY. We want to get right to it.

Ms. GRANGER. Right.

Secretary Mattis, thank you so much. And you can proceed.

[The written statements of Secretary Mattis and General Dunford follow:]

**SECRETARY OF DEFENSE JIM MATTIS
HOUSE APPROPRIATIONS SUBCOMMITTEE ON DEFENSE
WRITTEN STATEMENT FOR THE RECORD
WEDNESDAY, APRIL 25, 2018**

Chairwoman Granger, Ranking Member Visclosky, distinguished members of the committee; I appreciate the opportunity to testify in support of the President's budget request for Fiscal Year 2019. I am joined by Chairman of the Joint Chiefs, General Dunford, and the Department's Comptroller/Chief Financial Officer, Mr. David Norquist.

I am now in my second year as Secretary of Defense. With your help, we have made steady progress during the past 14 months.

In January, the Department published the 2018 National Defense Strategy – the first national defense strategy in a decade. Framed within President Trump's National Security Strategy, the 2018 National Defense Strategy provides clear direction for America's military to restore its competitive edge in an era of reemerging long-term strategic competition. The Department next released the 2018 Nuclear Posture Review which calls for America's military to provide a safe, secure, and effective nuclear deterrent that is "modern, robust, flexible, resilient, ready, and appropriately tailored to deter 21st century threats and reassure allies."

In South Asia and Afghanistan, uncertainty in the region has been replaced by the certainty of the Administration's South Asia Strategy. Concurrently in the Middle East, we have dramatically reduced ISIS' physical caliphate, using a coordinated, whole-of-government approach that works "by, with, and through" our allies and partners to crush ISIS' claim of invincibility and deny them a geographic haven from which to plot murder.

Last month, thanks to the bipartisan support and political courage of Congress – and the dedication of this committee – President Trump signed an omnibus spending bill that funds the government for the remainder of the fiscal year. This law – along with the two-year budget agreement passed as part of February's Bipartisan Budget Act – finally freed us from the inefficient and damaging continuing resolution in 2018, providing the funding needed to start implementing the 2018 National Defense Strategy.

We in the Department of Defense (DoD) are grateful to the American people for their sacrifices on behalf of military readiness and for the priority given the military at a time when numerous competing demands must be met by our government. We recognize and embrace our responsibility to gain full value from every taxpayer dollar spent on defense. As such, every decision we make will focus on lethality and affordability as we rebuild readiness and provide the combat capabilities required for our Nation's security.

While our trajectory is going in the right direction, our work has just begun. This is a year of opportunity and a chance to build on a strong start as we turn the 2018 National Defense Strategy into action. Continuing our close collaboration will address our security challenges, thereby enhancing the protection of our way of life. Initiatives such as codifying reform efforts to further streamline the defense acquisition process and employing feedback loops to reduce the number of Congressionally-mandated annual reports are areas that need our combined attention.

STRATEGY-DRIVEN BUDGET

The DoD's Fiscal Year (FY) 2019 budget is the second complete budget request from President Trump's administration. This budget will provide the resources necessary to fulfill DoD's requirements to meet the National Security Strategy's four vital national interests:

- Protect the American people, the Homeland, and the American way of life,
- Promote American prosperity,
- Preserve peace through strength, and
- Advance American influence.

The DoD FY 2019 base budget requests the resources necessary to fulfill the Department's enduring mission to provide the combat-ready military forces needed to deter war and, if deterrence fails, win in the event of conflict. Our armed forces reinforce America's traditional tools of diplomacy, ensuring that the President and our diplomats negotiate from a position of strength.

The 2018 National Defense Strategy provides clear strategic direction for America's military to reclaim an era of strategic purpose. Although the Department continues to

prosecute the campaign against terrorists, long-term strategic competition – not terrorism – is now the primary focus of U.S. national security.

Nations as different as China and Russia have chosen to be strategic competitors as they seek to create a world consistent with their authoritarian models and pursue veto power over other nations' economic, diplomatic, and security decisions. Rogue regimes like North Korea and Iran persist in taking outlaw actions that undermine and threaten regional and global stability. Additionally and despite our successes against ISIS's physical caliphate, violent extremist organizations continue to sow hatred, incite violence, and murder innocents.

Due to our open, multi-cultural, democratic society and strengthening economy—more than any other nation—America can expand the competitive space, challenging our competitors where we possess advantages and they lack depth. In order to restore our competitive military edge, the FY19 budget funds our defense strategy's three overarching lines of effort to:

- build a more lethal force,
- strengthen traditional alliances while building new partnerships, and
- reform the Department's business practices for performance and affordability.

Build a More Lethal Force

The Department's policies, expenditures, and training must contribute to the lethality of our military. We cannot expect success fighting tomorrow's conflicts with yesterday's thinking, weapons, or equipment. As General Washington said during his first State of the Union address, "to be prepared for war is one of the most effectual means of preserving peace," and a lethal military arm will enhance our diplomat's persuasiveness.

The paradox of war is that an adversary will move against any perceived weakness, so we cannot adopt a single, preclusive form of warfare. Rather, we must be able to fight across the entire spectrum of combat. This means the size and composition of our force matters, and the Nation must field sufficient, capable forces to deter conflict. If deterrence fails, we must win. In today's environment we are determined to maintain a

credible nuclear deterrent so these weapons are never used, and a decisive conventional force that includes irregular warfare capability.

Our military remains capable, but our competitive edge has eroded in every domain of warfare – air, land, sea, space, and cyber. The combination of rapidly changing technology, the negative impact on military readiness resulting from the longest continuous period of combat in our Nation's history, and a prolonged period of unpredictable and insufficient funding, created an overstretched and under-resourced military. The FY 2017 Request for Additional Appropriations and FY 2018 Omnibus Appropriation provided the funding needed to address immediate readiness shortfalls and accelerate modernization programs in a sustained effort to solidify our competitive advantage. As indicated below in Figure 1, America can afford survival. The FY 2019 strategy-based budget is affordable and will continue to enhance U.S. military capabilities, but the budget can only be fully effective if passed on time, not later than October 1st.

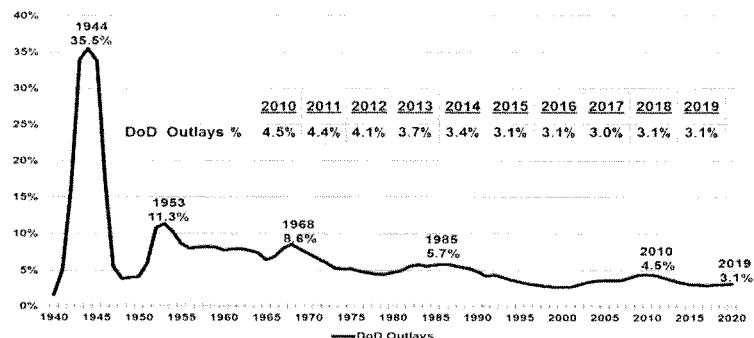


Figure 1. Defense outlays as a percentage of gross domestic product (FY 1940 – FY 2023)
The National Defense Strategy prioritizes major power competition and, in particular, reversing the erosion of U.S. military advantage in relation to China and Russia. The FY 2019 budget request invests in key capabilities to implement the National Defense Strategy through:

- modernization of nuclear deterrence forces and nuclear command, control and communications (NC3) capabilities;
- additional missile defense capabilities;

- modest increases in end strength for Army, Navy, Air Force, and Marine Corps;
- a 2.6% military pay raise;
- continuing increased procurement of certain preferred and advanced munitions;
- acquisition of 10 combat ships and 8 support ships;
- continued production of F-35 and F/A-18 aircraft;
- increasing funds to enhance communications and resiliency in space, and;
- investment in technological innovation to increase lethality, including research into advanced autonomous systems, artificial intelligence, and hypersonics.

As noted earlier, one of the key elements of the 2018 National Defense Strategy is to ensure America's military provides a safe, secure, and effective nuclear deterrent that is fit for our time.

The global situation is sobering. Russia is modernizing its full range of nuclear systems while espousing a theory of nuclear escalation in military conflict. China, too, is modernizing and expanding its already considerable nuclear forces, pursuing entirely new capabilities. China is also modernizing its conventional military forces to a degree that will challenge U.S. military superiority. While recent events have given rise to a sense of positive movement, North Korea's nuclear provocations threaten regional and global peace and have garnered universal condemnation by the United Nations. Iran's nuclear ambitions also remain an unresolved concern. Globally, nuclear terrorism remains a tangible threat.

The recently completed 2018 Nuclear Posture Review reaffirms the findings of previous reviews that the nuclear triad—comprised of silo-based intercontinental ballistic missiles, bomber aircraft, and nuclear-armed submarines—is the most strategically sound means of nuclear deterrence. Given the range of potential adversaries, their capabilities and strategic objectives, the review calls for a nuclear deterrent fit for its time—a tailored and diverse set of nuclear deterrent capabilities that provides a flexible, tailored approach to deterring one or more potential adversaries.

Deterrence exists in the mind of an adversary. Given today's complex security environment and the dynamics of deterrence, our Nuclear Posture Review introduces

two supplemental nuclear capabilities to strengthen our deterrent stance. Both capabilities deny any adversary the confidence that limited nuclear use can provide an advantage.

First is the near-term modification of a small number of existing submarine-launched ballistic missile warheads to reduce their yield. From submarines this provides a survivable capability to credibly hold at risk heavily-defended targets, which an adversary might believe could be successfully defended against current air-delivered nuclear weapons. This is consistent with the New START Treaty and does not increase the number of deployed U.S. strategic nuclear weapons. It counters any misconception on the part of Russia that they could escalate a conventional war through the use of a low yield weapon and we could only respond with a high yield weapon, which they calculate we would not do. In terms of deterrence, this submarine-launched low yield weapon gives us an option other than surrender or suicide, thus strengthening our deterrence to adversary use of nuclear weapons.

Second is the pursuit of a nuclear sea-launched cruise missile. This is not a new or novel capability. The U.S. had these weapons for decades before dismantling them after the Cold War. If we subsequently choose to go into full production, this INF Treaty-compliant capability will close a capability gap. Currently this effort is meant to incentivize Russia to return to compliance with its obligations under the INF Treaty.

These capabilities do not lower the nuclear threshold. Rather, by convincing adversaries that even limited use of nuclear weapons will be more costly than they can tolerate, it raises that threshold.

Preserving this range of options requires the recapitalization of our Cold War legacy nuclear deterrent forces as initiated during the previous Administration. **Modernizing the Nation's nuclear deterrent delivery systems**, including our nuclear command and control, is the Department's top priority, and these programs are fully funded in the FY 2019 budget. Most of the Nation's nuclear deterrence delivery systems, built in the 1980's or earlier, reach the end of their service life between 2025 and 2035, with all currently-fielded systems extended well beyond their original service lives. Replacement

programs are underway to ensure there are no gaps in capability when the legacy systems age out.

Investments include the Ground Based Strategic Deterrent system; COLUMBIA-class ballistic missile submarine; Trident II submarine-launched ballistic missile service life extension program; B-21 Raider strategic bomber; replacing the air-launched cruise missile with the Long-Range Standoff weapon; and B61 Mod 12 life extension program to consolidate four legacy B61 variants into a single variant for carriage on heavy bombers and dual-capable aircraft.

Our modernization estimates align with a recent Congressional Budget Office report that estimated \$1.2 trillion to (1) modernize and (2) operate our nuclear deterrent forces over 30 years when combined with the costs incurred by the Department of Energy to develop and sustain the warheads. However, the cost of our nuclear modernization program is significantly less than the cost of failing to deter war by underinvesting in these capabilities.

Nuclear deterrent forces, along with our conventional forces and other instruments of national power, help deter aggression and preserve peace. Our goal is to convince adversaries they have nothing to gain and everything to lose from the use of nuclear weapons. I note again that our deterrent stance does not lower the nuclear threshold, and it remains U.S. policy to consider employing nuclear weapons only in extreme circumstances to defend the vital interests of the United States, its allies, and partners.

The 2018 Nuclear Posture Review reaffirms the mutually reinforcing role of nuclear deterrence in a complex and dynamic security environment and continued U.S. commitment to non-proliferation, counter-nuclear terrorism, and arms control. The United States remains committed to its global leadership role to reduce the number of nuclear weapons, and to fulfill existing treaty and arms control obligations, including the New START Treaty. While Russia and U.S. both met their agreed New START strategic weapons reduction requirement on time, Moscow has violated the Intermediate Nuclear Forces (INF) Treaty over the past several years. While our intent is to bring Russia back into compliance, the duration of Russia's INF violation illustrates the challenging

environment for progress in arms control efforts and undermines U.S. confidence in Russia as a reliable treaty partner.

The FY 2019 budget funds **enhancements to U.S. missile defense capabilities** to defend the homeland, deployed forces, allies, and partners against an increasingly complex ballistic missile threat. In accordance with the soon-to-be-released 2018 Missile Defense Review, this budget requests continued robust support for missile defense capacity and capability to keep pace with advancing threats. The budget includes \$12.9 billion for missile defense, including \$9.9 billion for the Missile Defense Agency. The Department will develop an additional missile field in Alaska and increase the number of operational deployed Ground-Based Interceptors to 64 missiles as early as FY 2023. While our efforts remain focused on increasing interceptor capacity in Alaska, the Department has completed environmental impact studies for four possible ballistic missile defense sites on the East Coast should the Iranian ICBM threat materialize.

The FY 2019 request will continue development of the Redesigned Kill Vehicle to address the evolving threat along with development of a 2nd / 3rd-stage booster selectable capability to expand battlespace for ground-based interceptor engagements for homeland defense. The budget also uses available technology to improve existing sensors, battle management, fire control, and kill vehicle capabilities to include a Long-Range Discrimination Radar in Alaska, a Homeland Defense Radar in Hawaii, and an additional Medium Range Discrimination Radar in the Pacific.

For regional missile defense capabilities, the FY 2019 budget request supports improved missile defense capability on the Korean peninsula; provides funding for development of advanced missile defense technologies to counter future threats; supports the Aegis Ashore site in Romania and deployment of a second site in Poland as part of NATO's Ballistic Missile Defense architecture; increases BMD capability and capacity of the Aegis fleet; integrates SM-3 Block IIA into the Aegis weapon system; provides funding for Terminal High Altitude Area Defense (THAAD) development efforts and software upgrades; and continues support for Israeli Cooperative BMD Programs, including the Iron Dome system to defeat short-range missiles and rockets, and co-development/co-production of the David's Sling Weapon System and Arrow-3 System.

Modest increases in end strength for the Army, Navy, Air Force and Marine Corps are critical to restoring readiness. DoD's FY 2019 budget funds a total end strength increase of 25,900 as depicted in figures 2 (Active Force) and 3 (Reserve Force) below.

Service	FY 2018*	FY 2019	Delta (FY18 – FY19)
Army	476.0	487.5	+11.5
Navy	327.9	335.4	+7.5
Air Force	325.1	329.1	+4.0
Marine Corps	185.0	186.1	+1.1
TOTAL	1,314.0	1,338.1	+24.1

Figure 2. Active Component End Strength (in thousands) *FY 2018 reflects the PB request

Service	FY 2018*	FY 2019	Delta (FY18 – FY19)
Army Reserve	199.0	199.5	+0.5
Navy Reserve	59.0	59.1	+0.1
Air Force Reserve	69.8	70.0	+0.2
Marine Corps Reserve	38.5	38.5	--
Army National Guard	343.0	343.5	+0.5
Air National Guard	106.6	107.1	+0.5
TOTAL	815.9	817.7	+1.8

Figure 3. Reserve Component End Strength (in thousands) *FY 2018 reflects the PB request

Our joint culture remains one of our military's greatest strengths, and a force multiplier on the battlefield. Each service's manpower needs remain unique to their specific missions. For example, the Army will continue to rebuild manpower readiness with a new "Sustainable Readiness" force generation model, making greater use of Reserve forces, updating the force structure model, and providing greater home station training against a broad range of threats. The Navy will ensure Sailors with the right skills are assigned to the most appropriate jobs, using the increase in end strength to reduce identified gaps in critical manning areas. The Marine Corps will implement a 1:2 deploy-to-dwell ratio for active duty forces, providing more recovery time between deployments and for home station training. The Air Force is closing gaps in aircrew and skilled maintenance personnel, targeting their increased personnel to get more planes in the air.

Increasing lethality requires us to change our approach to talent management. We must reinvigorate our military education and training, and hone our civilian workforce's expertise. The creativity and talent of the Department is our deepest wellspring of strength and warrants greater investment. The FY 2019 budget will continue to invest in the military's most important asset—its warfighters—with a **2.6% military pay increase**. This pay raise and the increase in manpower will improve readiness and lethality by reducing personnel tempo and retaining skillsets like cyber, electronic warfare, and special operations. With changes to our forces' posture, we will prioritize for warfighting readiness in major combat, making us more strategically predictable and reliable for our allies but operationally unpredictable to any adversary.

The U.S. Military's predominant mission is to be prepared to fight and win our Nation's wars. No human endeavor is more demanding physically, mentally, and emotionally than the life and death struggle of battle. High standards for military service are designed to ensure our military remains the most professional and lethal force in the world. While not everyone in the military sees combat, every Soldier, Sailor, Airman and Marine must be physically and mentally qualified and prepared to endure the hardship of war, for the U.S. military to carry out its demanding missions.

Acknowledging that infantry units take over 80% of combat casualties, the Department's Close Combat Lethality Task Force is integrating human factors and technology to ensure our forces retain their hard won superiority in battle. We will expose troops to as many simulated tactical and ethical challenges possible before they see combat, ensuring that their first time in combat doesn't feel like their first time in combat. The Task Force will also provide recommendations regarding the fundamentals of performance, including physical fitness and nutrition standards. The end result is to ensure that U.S. close quarters battle is conducted in a way that ferociously destroys the enemy's spirit and brings back as many as possible in top physical and mental shape.

To ensure the most lethal and effective fighting force in the world, the Department maintains high mental, physical, and behavioral standards. These necessarily high standards mean that 71% of young Americans (ages 17-24) are ineligible to join the military without a waiver. The Department's detailed 44-page report thoroughly explains

why and under what circumstances transgender persons without gender dysphoria can serve, and why transgender persons with gender dysphoria cannot, except in limited circumstances. I'm confident that my recommendation to the President is in the best interests of the military and is consistent with the Constitution. The report also explains why transgender persons who entered under the prior administration's policy will be retained. The Department will continue to comply with the court orders that require the accession and retention of transgender persons until this issue is fully resolved, and I must remain careful with my comments on this matter while it is in active litigation.

Continued increased procurement of preferred and advanced munitions is necessary due to ongoing operations in the Middle East and the need for war reserves. Specifically, the DoD has expended a significant number of munitions, primarily to defeat Islamic State of Iraq and Syria (ISIS). Many preferred munitions are precision-guided, low-collateral damage munitions, used by all Services and by U.S. allies. Addressing the Department's need to maintain critical munition inventories, the FY 2017 and FY 2018 funds you provided have strengthened the Department's lethal posture, enabling our industrial base to increase production capacities. The FY 2019 budget provides \$4.4 billion to continue to procure munitions at maximum production capacity, lowering the price for each unit and ensuring greater buying power for those munitions as we rebuild our war reserve.

The United States remains the world's preeminent maritime power. During peacetime and in times of conflict, Sailors and Marines are deployed at sea, enabling forces to arrive sooner and remain longer, while bringing everything they need with them. These forces reassure allies and temper adversaries' designs. The U.S. Constitution vests Congress with the authority to "provide and maintain a Navy," and the FY 2019 budget provides \$23.7 billion to **fund 10 combat ships and 8 support ships**. These funds arrest the downward trajectory of the Navy's size and lethality. Consistent with the National Defense Strategy, the Fleet will continue to grow to meet capabilities needed in the future and to maintain an industrial base healthy enough to adapt and evolve in a dynamic environment. The FY 2019 budget provides for a deployable battle force of 280 ships growing to 355, supporting the requirements to respond to persistent and emerging threats. We are also increasing near-term capacity by investing in service life extension

programs for six guided missile cruisers (adding five years of service life) and one Los Angeles-class submarine (extending service life by 11 years). We are committed to expanding the Navy while making it fit for operations in the face of future threats.

Along with shipbuilding, the FY 2019 budget prioritizes capabilities to enhance air and sea power through the **continued production of F-35 and F/A-18 aircraft**. The F-35 program is developing, producing, and fielding three variants of the F-35 to support the needs of the U.S. Air Force, Marine Corps, and Navy. The budget requests 77 F-35s and 24 additional F/A-18 Super Hornets in FY 2019, increasing the readiness of the Navy's fighter fleet and relieving pressure on its aging, legacy F/A-18A-D aircraft. It remains imperative that our air fleet deliver performance, affordability, and capability. The F-35 aircraft is performing well, but the contractor is not delivering the affordability that keeps solvency and security as our guideposts. We are working with the contractor to reduce the costs associated with purchasing and sustaining the F-35. We will evaluate the performance of both F-35s and F/A-18s to determine the most appropriate mix of aircraft as we move forward.

The FY 2019 budget request provides \$9.3 billion for space and space-based **systems to enhance communications and resiliency in space**, addressing needs for overhead persistent infrared capabilities; positioning, navigation, and timing (PNT); and space launch systems. The Department will sustain existing systems, while developing follow-on capabilities to support operations in a contested space environment.

The Air Force will continue the production of space-based infrared systems (SBIRS) and advanced extremely high frequency space vehicles currently in production to meet military satellite communication needs. Facing rising threats to our space capabilities, however, the FY 2019 budget request transitioned the SBIRS space vehicles 7 and 8 procurements to the Next Generation Overhead Persistent Infrared effort in order to field rapidly a more survivable system by the mid-2020s. The Air Force will incorporate a technology refresh of the sensor to assure missile warning capabilities equal to or greater than today's SBIRS, taking advantage of sensor technology improvements.

The FY 2019 budget request supports resiliency improvements in the PNT mission, incorporating military protection capability into the next generation global positioning system (GPS) III constellation. This enhancement assures PNT capabilities in contested environments and funds improvements to the GPS ground segment to improve anti-jamming and secure access of military GPS signals.

Successful implementation of the 2018 National Defense Strategy includes **investing in technological innovation to increase lethality**. Rapid technological change includes developments in advanced computing, big data analytics, artificial intelligence, autonomy, robotics, miniaturization, additive manufacturing, directed energy, and hypersonics—the very technologies that ensure we will be able to fight and win wars of the future. Ultimately, these technologies will change the character of war, a reality embraced by DoD.

The Department's FY 2019 Science and Technology (S&T) program invests in and develops capabilities that advance the technological superiority of the U.S. military to counter new and emerging threats. The Congressionally-directed split of my office's Undersecretary of Defense (Acquisition, Technology and Logistics) into two portfolios (Acquisitions and Sustainment, and Research and Engineering) has enabled a stronger focus on urgently needed innovation, aligned with our defense strategy.

The FY 2019 budget request for science and technology is \$13.7 billion, focusing on innovation to advance DoD's military dominance for the 21st century. Highlights include: a robust basic research program of \$2.3 billion; funding the Defense Advanced Research Projects Agency budget of \$3.4 billion to develop technologies for revolutionary, high-payoff military capabilities; and continuing to leverage commercial research and development to provide leading edge capabilities to the Department while encouraging emerging non-traditional technology companies to focus on DoD-specific problems.

The 2018 National Defense Strategy recognizes cyberspace as an increasingly contested warfighting domain, where malevolent cyber incidents and attacks present significant risks to national security. Long-term strategic competitors like Russia, China, North Korea, and Iran are using increasingly aggressive methods and levels of

sophistication to conduct malicious activities. The challenge facing the Department is equally applicable to public and private networks across the United States, networks that are already held at risk.

In terms of cyber as a contested domain, the Department of Defense has two broad portfolios: First is DoD's requirement to defend its networks, weapons, infrastructure, and information while providing integrated offensive cyber capabilities as options if needed. Second is our responsibility to Defend the Nation, which we perform by defending forward against significant cyber threats, and by supporting the Department of Homeland Security (DHS) which has the lead responsibility for integrating various governmental roles, missions, and responsibilities. Because DoD has offensive and defensive cyber capabilities in U.S. Cyber Command (Title 10) and the National Security Agency (Title 50) on a scale and scope not available through other agencies and departments, we have a responsibility to the President and the Secretary of DHS for effectively aligning our capabilities to support cyber deterrence and responses to malicious cyber actions as part of a whole of government approach. Further, protection of our Nation's economy is fundamental to protecting our open society's way of life and ultimately to maintaining our military power. There are critical sectors (e.g., energy/electricity, finance, communications) vulnerable to disruption which must be reflected in our Nation's strategy and DoD's role.

The FY 2019 budget provides \$8.6 billion to build and maintain offensive and defensive capabilities for cyberspace operations. This funding also provides the resources needed to organize, train, and equip the 133 Cyber Mission Force teams whose purpose it is to perform DoD's cyber missions. This budget further provides the resources to elevate U.S. Cyber Command to a 4-star level command as required by the 2017 NDAA, to ensure DoD's organization accounts for the new threats facing our Nation.

Across manpower, research, procurement, operations and maintenance, and construction—every investment in the FY 2019 budget is designed to contribute to the lethality of our military as we adapt the size and composition of our force to address the current international situation while adjusting our stance to account for an evolving future. The enduring departmental theme is derived from our National Defense Strategy

and Congressional intent: that we field forces sufficient and capable of deterring conflict or dominating the battlefield if we must fight and win. This year's budget reinforces a message to those seeking to threaten America's experiment in democracy: if you challenge us, it will be your longest and worst day.

Strengthen Traditional Alliances while Building New Partnerships

The 2018 National Defense Strategy's second line of effort is to strengthen traditional alliances while building new partnerships.

In the past, I had the privilege of fighting many times in defense of the United States, but I never fought in a solely American formation; it was always alongside foreign troops. Easier said than done. Winston Churchill noted that the only thing harder than fighting with allies is fighting without them. History proves that we are stronger when we stand united with others. Accordingly, our military will be designed, trained, and ready to fight alongside allies.

Acknowledging the lessons of World War II, the Greatest Generation invested in this approach to security, and our Nation's resulting prosperity helped much of the world develop. Working by, with, and through allies who carry their fair share remains a source of strength for the U.S. Since the costly victory in World War II, Americans have carried a disproportionate share of the global defense burden while others recovered.

Today, the growing economic strength of allies and partners has enabled them to step up, as demonstrated by the 74 nations and international organizations participating in the Defeat-ISIS campaign, and again in the 41 nations standing shoulder-to-shoulder in NATO's Resolute Support Mission in Afghanistan. This year, every NATO ally has increased their defense spending, and 15 NATO allies are also increasing their defense budgets as a share of gross domestic product, giving credence to the value of democracies standing together. Our Pacific partners are also doing so.

To strengthen and work jointly with more allies, our organizations, processes, and procedures will be ally friendly. The Department will do more than just listen to other

nations' ideas—we will be willing to be persuaded by our partners, recognizing that not all good ideas come from the country with the most aircraft carriers. This line of effort will bolster an extended network of like-minded nations capable of promptly and prudently meeting the challenges of our time.

The FY 2019 budget prioritizes investment where it is needed today and tomorrow. In the Middle East, we will work with responsive governments to ensure a more stable and secure region that denies safe haven to terrorists; is not dominated by any power hostile to the United States; and that contributes to stable global energy markets and secure trade routes. The \$69 billion requested for the Overseas Contingency Operations account maintains our regional presence to protect the homeland, allies, and partners from terrorist threats. The budget request supports U.S. forces in Afghanistan as part of the Administration's South Asia Strategy; continues operations to prevent the resurgence of ISIS; and continues our security partnership with Iraqi Security Forces to support Iraq's long-term stability and independence.

NATO remains our key security alliance. The Overseas Contingency Operations request also provides \$6.5 billion for the European Deterrence Initiative (EDI). Established in 2015, the EDI supports a strong and free Europe, reaffirms America's commitment to the security and territorial commitment of NATO member states, and enhances activities in Eastern Europe to deter Russian aggression such as we have observed in Georgia and Crimea/Ukraine. This initiative also increases bilateral and multilateral exercises and training with allies and partners to ensure our deterrent stance is built on a strong, joint military capability.

A free and open Indo-Pacific region provides prosperity and security for all. We will continue to strengthen our alliances and partnerships in the Indo-Pacific to a networked security architecture capable of deterring aggression, maintaining stability, and ensuring free access to common domains. With key countries in the region, we will bring together bilateral and multilateral security relationships to preserve the free and open international system.

In our own hemisphere, the Canadian-American North American Air Defense Command is a long-standing, allied effort to protect both our nations. We maintain mature relations with both Canadian and Mexican militaries with a high degree of quiet collaboration. Further South we work jointly with Latin American nations on counter-narcotics and other operations and training efforts.

Our efforts in Africa are largely focused on assisting nations facing violent terrorists to develop their own capability to provide internal security and mutual support against insurgents and terror groups. Ethical use of force is inherent in all training we provide.

Reform the Department's Business Practices for Performance and Affordability

As we take proactive steps to ensure our military is ready to fight today and in the future, we must urgently reform the business practices of the Department to provide both solvency and security. **We will continue to establish a culture of performance where results and accountability matter on every expenditure, thereby gaining full benefit from every single taxpayer dollar spent on defense.** We also have a commitment to exercise the utmost degree of financial stewardship and budget discipline within the Department, and we will deliver our Department's full financial audit this year. We also have the right leaders in place to make meaningful reform a reality: Pat Shanahan as Deputy Secretary of Defense; Jay Gibson as Chief Management Officer; Ellen Lord as Undersecretary of Defense for Acquisitions and Sustainment; Michael Griffin as Undersecretary of Defense for Research and Engineering; Bob Daigle as Director of Cost Assessment and Program Evaluation; and David Norquist as the Department's Comptroller/Chief Financial Officer. Each brings the intellect and energy required to implement and sustain meaningful reform, ensuring the Department provides performance and affordability for the American taxpayer.

The Department began a consolidated financial statement audit in FY 2018. **For the first time, the Department will complete an independent and full audit across its business processes and systems, as required by law.** A financial statement audit is comprehensive, occurs annually, and covers more than just financial management. During a financial statement audit, an independent public accounting firm or the DoD

Office of Inspector General examines the Department's books and records. Financial statement audits give management independent validation and feedback on the effectiveness of each reporting entity's business systems and internal processes and controls. The financial statement audit helps drive enterprise-wide improvements to standardize our business processes and improve the quality of our data. Audits also ensure Department leaders have visibility over the counts, locations, and conditions of DoD property to inform current readiness and inform future programming, budgeting, and investment decisions. While we fully expect to find deficiencies, we will take swift action to correct them, thereby earning the trust of Congress and the American people.

Remediating audit findings is at the center of our financial improvement strategy. The Department owes accountability to the American people. The taxpayers deserve a level of confidence that the Department's financial statements present a true and accurate picture of its financial condition and operations. Transparency, accountability, and business process reform are some of the benefits the Department will receive from the financial statement audit even before achieving a positive opinion.

The Department is transitioning to a culture of performance and affordability that operates at the speed of relevance. We will prioritize speed of delivery, continuous adaptation, and frequent modular upgrades. With your continued, critical support, we will shed outdated management and acquisition processes while adopting American industries' best practices. Our management structure and processes are not engraved in stone. They are a means to an end—empowering the warfighter with the knowledge, equipment, and support needed to fight and win. If current structures inhibit our pursuit of lethality, I have directed Service Secretaries and Agency Heads to consolidate, eliminate, or restructure to achieve the mission.

Deputy Secretary of Defense Shanahan has established the Reform Management Group (RMG), which relies on cross-functional teams to drive efficiency by using shared, centralized services throughout the Department with the goal of making each area maximally effective and improving our performance. The RMG's central goal is to leverage best practices, centers of excellence, and private sector sources to benchmark and best align business operations. Improved performance in the Department's business

operations leads to a more effective force, and savings will be reinvested to increase lethality.

Initial Reform Teams are focused on evaluating operations in the following areas:

- Information Technology,
- Healthcare,
- Real Property,
- Human Resources,
- Financial Management,
- Contracted Services and Goods,
- Logistics and Supply Chain,
- Community Services, and
- Testing and Evaluation.

Goals and performance metrics are crucial to measuring the benefit-to-cost and value generated as business processes are optimized. Key to this reform effort is generating relevant, accurate, and timely data. Displaying this data will ensure that all decision makers have access to the best information on a real-time basis. As reform efforts are underway, the longer-term objective is to institutionalize the behavior of continuous improvement throughout the culture of the Department.

As the Department implements reform initiatives that reduce the operating costs of institutional activities, those resources will be reallocated to readiness, modernization, and recapitalization. The Department is ensuring that the savings associated with better business practices from previous Presidents' Budgets are implemented fully, including streamlining major headquarters activities and eliminating redundancy. This effort includes a systemic review of past Inspector Generals' findings to ensure remedial action has been fully implemented.

There are several efforts currently underway to improve the Department's ability to acquire and field products and services that provide for significant increases in mission capability and operational support in the most cost effective and schedule efficient manner possible.

A Defense Acquisition System that facilitates speed and agility in support of mission accomplishment is key. The Department is engaging with the independent advisory panel on streamlining and codifying acquisition regulations established by section 809 of the FY 2016 NDAA and amended by section 863 of the FY 2017 NDAA. This effort also includes potential recommendations for new statutes as well as amendments or repeal of existing statutes.

The Department looks forward to working with the Congress to provide the right capabilities to the warfighters when needed and at an affordable cost. A Defense Acquisition System that facilitates speed and agility in support of the aforementioned objective is key in this regard.

Current Issues Update

Syria: Syria's civil war began in 2011 and now spans two administrations, providing ISIS an ungoverned space from which to commit murder and oppression, fomenting attacks globally. Our chosen strategy is to act by, with, and through allies and partners, diplomatically and militarily. The reason we have troops in Syria is solely to surround and annihilate ISIS as part of the 70-nation Defeat-ISIS Coalition. No military solution is possible in the Syrian civil war, and we continue to support a diplomatic solution as part of the U.N.-led peace process, led by U.N. Special Envoy to Syria Steffan de Mistura. The 13 April use of military force was a distinct military operation exercised in the face of compelling evidence that chemical weapons were used in Duma and, as U.N. Secretary General Stoltenberg stated the following day, our "response to Syria's use of chemical weapons was targeted, measured, and appropriate." This proportional response, conducted under President Trump's Article II Constitutional authority, does not signal an escalation in the ongoing conflict in Syria.

Aviation Mishaps / Deaths: Recent aviation mishaps across each of the Services are tragic and troubling, with 133 service members killed over a five year period. In the last four weeks alone, 16 service members have been killed. I am concerned that these recent mishaps represent lagging indicators, a tragic manifestation of readiness that has degraded during 17 years of war and made worse by budget cuts and fiscal instability.

The two-year Bipartisan Budget Act and 2018 Omnibus appropriation will begin restoring the flight hours, equipment, and manpower needed to regain readiness, but it took us years to get to this point and measurable improvements will take time.

Border Security Support: In support of the Department of Homeland Security, and as directed by the President, I have authorized use of up to 4,000 National Guardsmen in Title 32 duty status. They will be assigned supporting roles requested by DHS along our southern border region under the command of their respective governors. Current requested support is for aviation, surveillance, intelligence analysis, and planning support in priority sectors. I anticipate additional requests for construction and logistical support. National Guard personnel will not perform law enforcement duties or interact with migrants. Previously employed Title 10 forces (approximately 195) conducting ongoing counter-narcotics support missions remain under U.S. Northern Command's control. We have nearly completed our FY 2018 baseline that would allow us to request your approval to reprogram funds and are quickly initiating the full mid-year review to examine execution, emerging requirements, program performance and year-of-execution realities. We will work closely with Congress to identify assets and sources to protect readiness as we pay for National Guard support for the Southwest Border.

Cancellation of Joint Surveillance Target Attack Radar System (JSTARS)

Recapitalization and Space-Based Infrared Systems: The Air Force has proposed replacing JSTARS – the aircraft that performs battle management, command and control, and ground moving target sensing – with a network of sensors, fusing information from space, air, ground, and sea sensors. In a contested environment with integrated air defenses, the currently planned JSTARS replacement would be unable to get close enough to the fight to accomplish its mission, leaving our forces potentially blind to enemy activity. These functions must be adapted if they are to survive in the changed threat environment. We will move swiftly to Advanced Battle Management and Surveillance, and the Next Generation Overhead Persistent Infrared procurements, rapidly fielding capabilities with more survivability.

Niger Incident and Loss of Four Soldiers: This incident and contributing factors have been extensively investigated by U.S. Africa Command. I have completed my review of

the investigation and the Department has begun notifying the families of our fallen Soldiers. We will brief Congressional leadership once all families have been notified, followed by a public release.

Countering America's Adversaries Through Sanctions Act (CAATSA): President Trump signed CAATSA into law on August 2, 2017, imposing new sanctions to counter aggressive actions from Iran, Russia, and North Korea. I look forward to working with Congress to address the national security implications created by this act. It is important for us to have a flexible waiver authority, otherwise we prevent ourselves from acting in our own best interest and place an undue burden on our allies or partners.

Transition to the Cloud: DoD must remain on the cutting edge of advanced computing capabilities to support warfighting and lethality. Our cloud initiative simplifies the ability to provide enterprise-wide access to information and improves security to safeguard critical information. Despite what you have heard in the media, the contract is not a sole source contract. The contract, which will have a 2-year base period, will follow a fair and open competition with the ultimate decision made based on performance and affordability. We are pursuing this path to ensure cloud providers are competitive and responsive to DoD needs.

CONCLUSION

Again, thank you for your bipartisan support and strong spirit of collaboration between this committee and our Department. I particularly appreciate Chairwoman Granger's initiative, providing the Department with the spending flexibility needed to spend taxpayer dollars wisely due to passage of the omnibus five months into the fiscal year.

The 2018 National Defense Strategy's three primary lines of effort—**building a more lethal force, strengthening traditional alliances while building new partnerships, and reforming the Department's business practices for performance and affordability**—will restore our competitive military advantage, ensuring we are prepared to fight across the full spectrum of combat now and into the future.

Department of Defense readiness degraded over the course of many years. It will take continued budgetary stability to rebuild the readiness and increase the lethality required to expand the American military's competitive space. Now that we have a strategy-driven budget, the FY 2019 budget request needs a timely appropriation enacted before October 1st to deliver the best return on readiness and modernization programs.

This budget request requires each and every one of us in the Department to be good stewards of every taxpayer dollar spent on defense. This budget also holds me accountable to the men and women of the Department of Defense, for they are the ones that must ultimately turn the 2018 National Defense Strategy into action. Every day, more than two million Service members and nearly one million civilians do their duty, honoring previous generations of veterans and civil servants who have sacrificed for their country. I am reminded every day of the privilege I have to serve alongside them, and I thank them for their tireless efforts and unyielding standards in defense of our Nation.

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HOUSE COMMITTEE ON APPROPRIATIONS – DEFENSE SUBCOMMITTEE

STATEMENT OF

GENERAL JOSEPH F. DUNFORD, JR., USMC

19TH CHAIRMAN OF THE JOINT CHIEFS OF STAFF

DEPARTMENT OF DEFENSE BUDGET HEARING

APRIL 25, 2018

Chairwoman Granger, Ranking Member Visclosky, distinguished members of this committee, thank you for the opportunity to join Secretary Mattis and Under Secretary Norquist in appearing before you today. It is an honor to represent the men and women of the United States military.

Today, the U.S. Armed Forces have a competitive advantage over any potential adversary. We are capable of meeting all the requirements associated with defending the homeland and our way of life, and we can meet every one of our alliance commitments. I am confident we can prevail in any armed conflict. That said, one of my greatest concerns as Chairman is the erosion of our competitive advantage over time.

Last summer, I testified that after years of sustained operational commitments, budgetary instability, and advances by our adversaries, our competitive advantage was eroding. I assessed that, without sustained, sufficient, and predictable funding, within five years, the U.S. military would lose its advantage in power projection—the basis for how we defend the homeland, advance U.S. interests, and meet our alliance commitments.

I estimated that arresting the erosion of our competitive advantage required real budget growth of at least three percent above inflation across the Future Years Defense Plan (FYDP), and restoring it would cost more. This figure represented the minimum investment necessary to rebuild readiness and modernize key warfighting systems while continuing to meet operational requirements.

Driven by the National Defense Strategy (NDS), the Fiscal Year 2019 (FY19) Budget Request builds on the FY17 and FY18 budgets and supports rebuilding the U.S. military into the lethal and ready Joint Force the nation needs. However, we cannot reverse a decade-plus of erosion in one fiscal year. The Department must continue to receive sufficient, sustained, and predictable funding for the foreseeable future to restore our competitive advantage and ensure we never send our sons and daughters into a fair fight.

Strategic Environment

The 2018 NDS recognizes that “The central challenge to U.S. prosperity and security is the reemergence of long-term, strategic competition by... revisionist powers.” The Joint Force must face this long-term threat while still managing the immediate challenges posed by rogue regimes and terrorists. With China and Russia as the priority, we continue to use North Korea, Iran, and violent extremist organizations to inform our planning, force design, force development, and risk assessments.

Our adversaries—particularly China and Russia—continue to develop concepts and invest in capabilities specifically designed to counter our advantages. The United States military is in a fierce competition to harness the benefits of emerging technologies—including hypersonics, artificial intelligence, directed energy, and biotechnology—as these developments will fundamentally change the character of war. China and Russia are also increasingly active and adept at what we call “competition short of armed conflict”: integrating economic coercion, political influence, criminal activity, military posturing, unconventional warfare, and information and cyber operations to coerce opponents, advance their interests, and create strategic advantages without triggering a conventional armed response.

China intends to become a global military power and is building the capability to do so. Militarily, China seeks to limit our access and undermine our important alliances in the Indo-Pacific. They are developing a full range of air, maritime, space, and cyber capabilities while modernizing their nuclear enterprise. Their continued militarization of the South and East China Seas reflects their disregard for a rules-based international order. They are increasing their diplomatic and economic influence through the Belt and Road Initiative, and their military interests have followed this enterprise into South Asia, the Indian Ocean, and beyond. We continue to seek Chinese cooperation

on a number of fronts, especially with respect to North Korea, but their “strong-rule-the-weak” foreign policy approach is incompatible with U.S. interests.

Russia also continues to modernize and invest across the full range of military capability, including new aircraft, submarines, armor, counter-space, air defense systems, and conventional and nuclear strike capabilities. These investments and activities are specifically designed to limit our power projection capability and undermine the credibility of U.S. alliances, especially NATO.

While modernizing and preparing for long-term competition and potential armed conflict with these revisionist powers, we must also manage the ongoing challenges of rogue regimes and violent extremist organizations.

Although I remain cautiously optimistic about the potential for talks in the near future, North Korea’s reckless pursuit of nuclear and missile capability is perhaps the most immediate threat to the security of the United States and our Allies. In 2017, North Korea conducted an unprecedented 17 ballistic missile test events, two of which overflew our treaty Ally, Japan. Last year also saw North Korea’s first successful tests of Intercontinental Ballistic Missiles (ICBMs) capable of ranging the continental United States—and they tested a nuclear device designed for ICBM delivery. I have testified to Congress several times in recent months about Pyongyang’s accelerated capability development and the threats it poses to U.S. interests, to our Allies in the Pacific, and to the homeland.

Iran continues to project malign influence and threaten freedom of navigation in the Middle East. They are also modernizing their space, cyber, missile, and conventional maritime capabilities, which pose a direct threat to our Allies and our interests in the region.

We continue to grapple with the challenge of violent extremism, including ISIS, a resurgent al Qaida, and associated movements. Our strategy remains focused on cutting the flow of finances, foreign fighters, and their disruptive narrative,

while working by, with, and through local partners to sustain pressure on their networks, disrupt attacks, and dismantle their capabilities.

Defending our homeland, our Allies, and our interests in the near-term while restoring our competitive advantage and building lethality will require a focused and sustained effort over many years.

Where We Are Today

Fortunately, with your support, we have begun to arrest the erosion of our competitive advantage. The additional appropriation in FY17 supported immediate investments in readiness, including increases to end strength, funding for critical training, initial restoration of ammunition stocks, and continued modernization of critical systems.

PB18 builds on the readiness recovery started in FY17 and begins to balance the program. It allows the Department to meet operational requirements, begin rebuilding mid- and long-term readiness, and restore warfighting capability and capacity.

While we are grateful for the FY18 appropriation, we spent the first six months of FY18 with FY17 funding levels. The flexibility provided in recent legislation will enable the Department to execute the FY18 budget responsibly. This includes easing the 80/20 rule (that prevents obligating more than 20% of a one-year appropriation in the last two months of the fiscal year) and raising the Below Threshold Reprogramming amounts. Though these measures will help the Department utilize FY18 funds effectively, we need predictable funding in FY19 and beyond to restore our competitive military advantage.

The Department's FY19 budget funds ongoing operations, builds on FY18 readiness improvements, and supports the NDS by investing in modernization for high-end competition against near-peer adversaries.

Operations. Our first budget priority is to provide our deployed servicemembers the resources they need to effectively accomplish their missions—whether in active contingencies, deterring adversaries, assuring Allies, or building partner capacity.

PB19 supports deterrence and assurance efforts around the world. In the Pacific theater, this budget accelerates substantial construction projects to improve the infrastructure that facilitates power projection in the region. It funds prepositioning of critical munitions, increased intelligence activity, and increased rotational troop presence. PB19 also improves missile defense by deploying 20 additional Ground Based Interceptors, with redesigned kill vehicles, at Fort Greely, Alaska across the FYDP. To deter Russian aggression, this budget fully funds the European Deterrence Initiative, increasing the number and quality of exercises with our NATO Allies, deploying key U.S.-based enablers, and modernizing prepositioned stocks. It also recapitalizes the Integrated Undersea Surveillance System, enhancing our ability to detect Russian submarines.

This budget provides \$69 billion for Overseas Contingency Operations (OCO), the bulk of which funds operations in Afghanistan, Iraq, and Syria. In Afghanistan, we are working toward a sustainable approach to stabilizing the Afghan government and denying terrorist sanctuary. In Iraq and Syria, we remain committed to eliminating the remnants of ISIS and setting the conditions to ensure ISIS cannot return. OCO funding also supports Operation ENDURING FREEDOM-Horn of Africa and counterterrorism efforts in northwest Africa and the Philippines.

The FY19 funding for ongoing operations not only ensures our deployed servicemembers have what they need to execute missions in Iraq, Syria, and Afghanistan, but also makes conflict less likely by assuring Allies and deterring aggression in key strategic theaters.

Readiness. Ensuring our forces are able to meet current operational requirements and rebuild the readiness required for great power competition requires significant, continued investment in readiness. PB19 builds on the readiness gains of PB18 by adding end strength, accelerating training, and increasing capacity to extend our readiness focus to the mid- and long-term.

This budget adds modest end strength to each of the services, allowing them to fill gaps in existing combat formations, address critical shortfalls in aviation maintenance, and increase manning in cyber and information warfare. The Air Force will address pilot shortages by adding two new training squadrons, enabling the production of 125 additional new pilots per year.

PB19 funds flight hour programs and ground combat training accounts to near-maximum executable levels. The Air Force upgrades training ranges and funds weapons system sustainment, while the Army funds an unprecedented 20 Combat Training Center rotations for Brigade Combat Teams.

PB19 also increases available capacity for all of the Services. The Navy funds service life extensions for six cruisers, as well as infrastructure, spares, and ship depot maintenance. The Army will create a 16th Armored Brigade Combat Team while accelerating fielding of four Security Force Assistance Brigades. This budget also adds necessary capacity in air defense, mobile rocket artillery, and operational command and control in Europe. PB19 also funds munitions inventory levels sufficient to meet multiple demands across theaters.

Finally, we will improve readiness by refining our global force management processes to achieve strategic flexibility and freedom of action. As directed by the NDS, Dynamic Force Employment will allow us to proactively shape the environment through scalable military presence and quickly deploy forces for emerging requirements while preserving long-term warfighting readiness.

PB19's investments in readiness build on the gains made in the past two years and are foundational to ensuring the U.S. military is ready to meet the challenges of today and tomorrow.

What We Must Do

The competitive military advantage we enjoy today is the result of capabilities developed by our Services in an era of unchallenged technological dominance. That era has now passed. Seventeen years of combat and seven years of budget instability have forced us to postpone modernization investments for the sake of near-term readiness. Meanwhile, our adversaries' investments in modernization have outpaced our own. As a result, the distinction between readiness and modernization has grown harder to discern. We must modernize now in order to be ready.

Restoring our competitive advantage in an era of great power competition will require a joint approach to concept and capability development, an ability to leverage cutting edge technology and asymmetric solutions, and sustained and predictable budgets. PB19 begins this restoration through targeted investments that develop the lethal, agile, and innovative Joint Force demanded by the threats of 2025 and beyond.

The Service Chiefs recently briefed you on their investments in the lethality of their individual Services. The following are priority investment areas for joint warfighting.

Nuclear. A safe, secure, and effective nuclear deterrent is essential to defending the homeland. Starting in the early 1990s, the Joint Force deemphasized the role of nuclear weapons, reducing our nuclear forces in both weapon types and overall size, and trading nuclear strength for arms control. Other nuclear-armed states did not follow our lead, choosing instead to embark on modernization and expansion efforts.

In accordance with the recently published Nuclear Posture Review, we will invest \$24 billion in FY19 to sustain and recapitalize the nuclear enterprise. This is a significant step in a 23-year program to recapitalize the all three legs of our aging strategic triad, our non-strategic nuclear forces, and our command and control systems. Initial delivery of modernized bombers and dual-capable aircraft (F-35s) is slated for the mid-2020s; we will achieve initial operating capability of modernized ground-based missiles in 2029; and the first modernized ballistic missile submarine will be operational in 2031. Nuclear deterrence is the highest priority mission for the Joint Force, and a truly joint enterprise. There is no margin remaining in the modernization schedule—we must deliver these critical programs on the established timelines.

Space. Unlike previous eras, when space was considered a benign and unchallenged environment, space is now a contested domain. The U.S. military depends on space-based capabilities to enable successful joint warfighting—specifically for intelligence collection; missile warning; weather monitoring; global communications; and precision positioning, navigation, and timing.

Potential adversaries understand the advantages space provides, and they view our reliance on this domain as a vulnerability they can exploit. Our near-peer competitors are increasingly challenging our competitive advantage in space.

We must bolster our space sensor architecture to improve our ability to characterize new and future threats. This budget builds on FY18 investments with a focus on space resiliency and mission assurance. It accelerates procurement of the next generation of space-based infrared systems to field a modernized, resilient space-based missile warning capability. Other investments focus on resilient systems for navigation, communications, and situational awareness. Given rapid advances in our adversaries' capabilities, the space domain will require continuous investment in future years.

Cyberspace. Cyberattacks threaten our military, our economy, and our society. Although China and Russia remain the greatest threats to U.S. security, Iran,

North Korea, and violent extremist organizations have all increased their capabilities and are aggressively conducting malicious activities in cyberspace. Most of these occur below the threshold of open warfare, but they are injurious nonetheless, and their implications for armed conflict are clear. FY19 cyber investments continue to prioritize defense of DoD information networks while improving offensive and defensive operations, building Cyber Mission Forces, and maturing command and control.

Electronic Warfare (EW). From voice and data communication to surveillance and targeting, every Joint Force operation today relies on access to the electromagnetic spectrum. As with space and cyber, potential adversaries see this reliance as a vulnerability they can exploit. The proliferation of technology has made electronic attacks both cheaper and more effective. To preserve our advantage in EW, PB19 invests in both offensive and defensive systems while exploring new concepts to maximize the effectiveness of our multi-domain EW capabilities.

Missile Defense. Our missile defense systems serve to protect the homeland, assure our Allies and partners, and deter adversaries. But the breadth of missile threats facing the Joint Force continues to increase in complexity and scope. Russia, China, North Korea, and Iran are all extending their operational reach and fielding larger and more capable arsenals. Their systems are increasingly mobile and resilient, with increased range and accuracy, expanding the risks they pose around the globe. Furthermore, they continue to develop means of complicating our missile defense operations. Among other investments and activities to counter this threat, we are increasing the number of Ground Based Interceptors and investing in additional Terminal High Altitude Area Defense and SM-3 interceptors.

While developing and refining the capabilities that will restore our advantage in competitive areas like these, we must accelerate research and development and experimentation in important fields with military implications. PB19 will see

increased investments in technologies such as hypersonics, artificial intelligence, directed energy, and biotechnology. We will also continue to refine our acquisition systems to enable rapid fielding of new capabilities.

Across the Joint Force, PB19 starts, accelerates, or continues funding for critical modernization efforts. These programs will require years of sustained funding to deliver material results, but they are all vital to ensuring the future force is capable of defending the homeland and advancing U.S. interests in the competitive security environment to come.

Conclusion

To implement the National Defense Strategy, the Joint Force requires sustained, sufficient, and predictable funding. The funding levels in the recent Bipartisan Budget Agreement are sufficient; I look forward to working with Congress to make our funding sustained and predictable so we can fully restore our competitive military advantage.

PB19 represents a significant investment in the lethal Joint Force the United States will need to prevail in future conflicts. We are committed to the responsible, disciplined, and transparent use of that investment. With your continued help and commitment, we will ensure we never send America's sons and daughters into a fair fight.

[CLERK'S NOTE.—The complete hearing transcript could not be printed due to the classification of the material discussed.]

WEDNESDAY, MAY 9, 2018.

TESTIMONY OF MEMBERS OF CONGRESS

OPENING STATEMENT OF CHAIRMAN GRANGER

Ms. GRANGER. The subcommittee will come to order.

This morning, the subcommittee will hold an open hearing in which any Members of the House have been invited to come and address the subcommittee on matters concerning the men and women who serve in our military.

This session is to hear from Members about what they think and what is important to them, in some ways that we can help them. So we welcome the opportunity to hear from our colleagues on these matters.

And I want to thank the Members who are appearing today for taking the time to testify and salute their commitment to our national security and our national defense. I don't think there is anything more important than that.

Without objection, all the testimony submitted by Members will be entered into the record. So ordered.

Before we begin with the testimony, I would like to recognize our ranking member, Mr. Visclosky, for any remarks he would like to make.

OPENING REMARKS OF MR. VISCLOSESKY

Mr. VISCLOSESKY. Thank you, Madam Chair.

Madam Chair, I thank you very much for holding the hearing. I was saying before we got started that this is my favorite hearing of the year, because I do believe, unfortunately, the committee has become, in many ways, very insular.

It is important that people understand we are charged with the constitutional responsibility to fund the day-to-day operation of the government. We are here, all of us, in a bipartisan fashion to solve problems. And we are also here in a bipartisan fashion to help Members.

So appreciate the Members, including Mr. Johnson, who is going to testify next, for being here. I am delighted to be here, and appreciate the chairwoman holding the hearing very much. Thank you.

Ms. GRANGER. Thank you, Ranking Member Visclosky.

We will now begin with the Members' testimony with Congressman Mike Johnson of Louisiana.

Congressman Johnson.

WEDNESDAY, MAY 9, 2018.

WITNESS

HON. MIKE JOHNSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF LOUISIANA

SUMMARY STATEMENT OF CONGRESSMAN JOHNSON

Mr. JOHNSON. Well, thank you so much, Chairwoman Granger and Ranking Member Visclosky and members of the committee. I appreciate all your time.

I sincerely am grateful for this opportunity to return to provide input during the committee's member day hearing for the fiscal year 2019 defense appropriations bill in the budget.

I have the distinct honor of representing a congressional district that is home to two vital military installations for our Nation and our national security interests around the world, and that is Fort Polk and the Barksdale Air Force Base, and even our smaller National Guard facilities such as Camp Minden.

As I am sure you know, Fort Polk is home to the Army Joint Readiness Training Center, and Barksdale Air Force Base is home to the Air Force Global Strike Command, our four-star command right there in my hometown.

As is evident with the recent provocations of Syria, North Korea, Iran, Russia, and others, we live in a highly uncertain and incredibly complex time, which further highlights the importance of these two bases and our military readiness to be fully prepared to combat any threat from overseas.

In keeping to today's time constraints, I will focus primarily on just two areas I think are essential—in an essential need of attention by this committee and the Congress, and that is modernizing our U.S. nuclear enterprise and ensuring U.S. Army capabilities are fully equipped for necessary training exercises.

As I begin, I just want to respectfully thank this committee for working closely with me last year while crafting the 2018 defense appropriations budget to begin the process of reengineering and modernizing the B-52 bombers. They are housed at Barksdale Air Force Base. And that is a much-needed makeover that will extend the life of the B-52s into the 2050s, which is kind of an amazing thing to think about, the engineering marvel that that is. And then, of course, it improves the range and fuel efficiency of those planes and actually decreases maintenance cost.

I would also like to relay my thanks for the continued support of Fort Polk from this committee in recognition of their vital importance to accomplishing its missions and our military readiness.

One on the nuclear enterprise. Today, I would just briefly like to speak to the nuclear weapons as they continue to play an integral role in the strategies of Russia, North Korea, Pakistan, India, and China. And, in fact, according to many reports, as you all know, and as evidenced from the recent aggressive actions, these countries are increasing their reliance on and modernizing their capabilities, whether it be in the land, air, or sea-based nuclear forces.

If this Congress is going to be serious about rebuilding our nuclear infrastructure, it has to continue to express support for the long-term commitment of our Barksdale Air Force Base and our

nuclear enterprise. And I applaud the decision by the Air Force to include the new entrance gate at the Interstate 20 and I-220 interchange into Barksdale Air Force Base on its unfunded priority list.

This project has to be completed in sequence because what this does is it paves the way for the construction of the new weapons storage area at that base, and that is currently scheduled to begin construction in fiscal year 2020.

The new weapons storage area is absolutely vital to America's nuclear enterprise, and it will support the overall activities of Global Strike Command, everything it oversees, and its necessary involvement in a wide array of strategic deterrence.

As members of this committee, you all are well aware, of course, of how critical the Bomber Command in the 8th Air Force in charge of our aging fleet, and Missile Command in the 20th Air Force in charge of the U.S. intercontinental ballistic missiles, are critical to deterrence and global strategy.

Second issue is ground capability. So in any event that maintaining a capable and robust nuclear option doesn't suffice as a deterrent from war, it is obviously imperative we have a capable and ready ground force. As this committee and Congress have presented a path forward to rebuilding our force structure, the need for modernizing our ground capabilities is certainly prevalent to ensure full mission readiness.

As a proud Member who represents one of the two unit training centers in the United States, Fort Polk Army Base and the Joint Readiness Training Center in our district, it is critical to highlight how the Army has continued to solidify its footprint with a state-of-the-art JRTC.

As Fort Polk's JRTC provides invaluable training for its advise and assist roles, it provides soldiers with the training and flexibility necessary to carry out the demands placed on them to achieve victory. It also partners with our close allies in collaborative joint exercises to prepare for the unique situations and challenges the unit may face while deployed.

As we work to regrow our ground forces and since Fort Polk remains a vital security asset, we should invest in the JRTC to ensure full military readiness.

I hope to work with members of this committee to ensure that the Army uses the right information and the proper methodology to maximize our resources and facilities to ensure Fort Polk and the JRTC continue to provide invaluable training to fully prepare and equip our men and women in uniform for the many challenges ahead. It is the only combat training center in the Nation that also trains and deploys combat units.

As I prepare to close, I just want to say the defense communities that surround both Barksdale and Fort Polk have a long and proven track record of fully supporting—enthusiastically so—these two vital military installations. And all these folks stand ready to help modernize our armed forces to meet our Nation's mission capabilities and necessary resources.

And just recently at Fort Polk, the Army completed its largest land purchase, over 47,000 acres, in an effort to provide even more robust training capabilities there for their brigade combat team rotations and all the rest. And we got \$90 million on the State level

for the interchange at Barksdale, which shows the investment of that State.

Finally, I just want to thank this committee for continuing these important priorities for this district and all of ours around the country. You have such important work and we are so grateful. I look forward to doing everything I can to support you and the committee's work to provide our military with the essential resources it needs. This is a top priority for all of us, and it should be.

With that, I yield back, and thank you again for your time.

[The written statement of Congressman Johnson follows:]

Testimony of Congressman Mike Johnson (LA-04)
Submitted to the House Appropriations Subcommittee on Defense
May 07, 2018

Thank you, Chairwoman Granger, Ranking Member Visclosky and members of the committee. I sincerely appreciate you giving me us opportunity to return to provide input during the committee's "member day" hearing for the Fiscal Year 2019 Defense Appropriations budget.

I have the distinct honor of representing a congressional district that is home to two vital military installations for our nation, and national security interests around the world – that's Fort Polk and Barksdale Air Force Base, and even our smaller National Guard facilities, such as Camp Minden. As I'm sure you know, Fort Polk is home to the Army Joint Readiness Training Center and Barksdale is home to the Air Force Global Strike Command. As is evident with the recent provocations of Syria, North Korea, Iran, Russia, and others, we live in highly uncertain and incredibly complex time, which further highlights the importance of these two bases and our military readiness to be fully prepared to combat any threat from overseas.

In keeping to today's time constraints, I will focus primarily on two areas I think are in essential need of attention by the committee and Congress – modernizing our U.S. Nuclear Enterprise and ensuring U.S. Army capabilities are fully equipped for necessary training exercises.

As I begin, I would like to respectfully thank this Committee for working closely with me last year while crafting the 2018 Defense Appropriations budget to begin the process of re-engineering and modernizing the B-52 bombers at Barksdale Air Force Base. This much needed

makeover will extend the life of the B-52's into the 2050s which is amazing to even think about, and improve range and fuel efficiency, and lower maintenance costs. I would also like to relay my thanks for the continued support of Fort Polk from this Committee, in recognition of their vital importance to accomplishing its missions and military readiness.

Nuclear Enterprise --

Today I would just briefly like to speak to the nuclear weapons as they continue to play an integral role in the strategies of Russia, North Korea, Pakistan, India and China. In fact, according to many reports as you all know, and as evidenced from recent aggressive actions, these countries are increasing their reliance on, and modernizing, their capabilities whether it be in land, air or sea-based nuclear forces.

If this Congress is going to be serious about rebuilding our nuclear infrastructure, it must continue to express support for the long-term commitment of Barksdale Air Force Base and for our Nuclear enterprise. I applaud the decision by the U.S. Air Force to include the new gate at I-20 – I-220 interchange into Barksdale Air Force Base on its unfunded priority list. This project has to be completed in sequence to pave the way for construction of the Weapons Storage Area, which is currently scheduled to begin construction in Fiscal Year 2020. The new Weapons Storage Area is absolutely vital to our nuclear enterprise, as it will support the overall activities Global Strike Command oversees, and its necessary involvement in a wide array of strategic deterrence. As members of this committee, you are well aware of how critical the Bomber Command, 8th Air Force in charge of our aging fleet and Missile Command, and the 20th Air

Force in charge of the United States Intercontinental Ballistic Missiles (ICBM's), are critical to deterrence and global strategy.

Ground Capabilities –

In any event that maintaining a capable and robust nuclear option does not suffice as a deterrent from war, it is imperative that we have a capable and ready ground force. As this committee and Congress have presented a path forward to rebuilding our force structure, the need for modernizing our ground capabilities is certainly prevalent to ensure full mission readiness. As a proud member who represents one of the two unit training centers in the United States, Fort Polk Army Base and the Joint Readiness Training Center in our district, it's crucial to highlight how the Army has continued to solidify its footprint with a state of the art Joint Readiness Training Center (JRTC). As Fort Polk JRTC provides invaluable training for Advise and Assist roles, and provides soldiers with the training and flexibility necessary to carry out the demands placed on them to achieve victory, it also partners with our close allies in collaborative joint exercises to prepare for the unique situations and challenges a unit may face while deployed.

As we work to regrow our ground forces, and since Fort Polk remains a vital security asset, we should invest in the JRTC to ensure full military readiness. I hope to work with members of this committee to ensure that the Army uses the right information and the proper methodology to maximize our resources and facilities to ensure Fort Polk and the JRTC continues to provide invaluable training to fully prepare and equip our men and women in

uniform for any challenges ahead, as it is the only Combat Training Center in the nation that also trains and deploys combat units.

Preparing to close, I just want to say the defense communities that surround both Barksdale Air Force Base and Fort Polk JRTC, have a long proven track record of fully supporting these two vital military installations and they stand ready to modernize our armed forces to meet our nations mission capabilities and necessary resources. Just recently at Fort Polk, the Army completed its largest land-purchase of over 47,000 acres in an effort to provide even more robust training capabilities for Brigade Combat Team rotations – an action that was fully supported by the local community enthusiastically so. Furthermore, the investment of \$90 million dollars to construct that I-20 – I-220 interchange into the Barksdale Air Force Base has seen strong support from these local communities as well as the State of Louisiana.

Finally, I just want to thank this committee for considering these important priorities for my congressional district as you do all these around the country. I look forward to doing everything I can to support the committee's work to provide our military with the essential resources it needs. It's a top priority for all of us and it should be.

Madam Chairwoman, I appreciate your leadership and truly appreciate the time you all take to consider all these priorities and the opportunity to show my continued support for our men and women in uniform, and I yield back.

Ms. GRANGER. Thank you. And thank you for appearing here today, and congratulations on having two installations that are so important in your district. I represent Fort Worth, Texas; it was an Air Force base. And then I had the misfortune to have that base closed during a BRAC. It is now realigned as a Joint Reserve Base, but I know what it means. And it is a very different sort of constituency, because they are coming and going, but we can be so helpful if we really understand what is going on at those bases. And so thank you for bringing that to our attention. We appreciate it very much.

Mr. JOHNSON. Yes, ma'am.

Ms. GRANGER. Anything you would like to say, Mr. Visclosky?

Mr. VISCLOSKY. Just to thank the witness in particular for your emphasis on readiness. And, again, I appreciate your thoughtful testimony, and compliment you on your choice of ties. Thank you.

Mr. JOHNSON. Thank you.

Ms. GRANGER. Thank you. Anything else you would like to leave with us?

Mr. JOHNSON. No. I just told my colleague here, Mr. Graves, it is good to be with a committee that has a lot of authority and power. So that is a nice change for a freshman.

Thank you for your time.

Ms. GRANGER. Thank you. Thank you very much.

We are waiting on Mr. McGovern. We will give some more time because Congressman Carter, the other Congressman Carter, was supposed to appear. And he may come in, but I don't think so. So we will wait a few more minutes.

Next, we will hear from Congressman Jim McGovern of Massachusetts.

Mr. McGovern, welcome. Sorry we had a little change in time, so we didn't mean to rush you, but that is the situation we are in.

Mr. MCGOVERN. No, that is fine. I am happy to be here, honored to be here with all of you. Thank you so much for giving me this opportunity.

WEDNESDAY, MAY 9, 2018.

WITNESS

HON. JAMES P. MCGOVERN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MASSACHUSETTS

SUMMARY STATEMENT OF CONGRESSMAN MCGOVERN

Mr. MCGOVERN. And I want to thank you, Madam Chair and Ranking Member Visclosky, for allowing me the opportunity to testify in support of the Wounded Warrior Service Dog Program. And I want to thank this committee in particular. You, in the last fiscal year, raised the amount for this program from \$5 million to \$10 million, and we are here to ask that we continue the \$10 million.

As you know, these service dogs have made an incredible difference in the life of many of our men and women who have served overseas in battle and—but it is an expensive proposition to train these dogs, and sometimes that expense makes it difficult for our veterans to get access to them. And this program provides grants so that these dogs can be trained and our veterans can get what

they need. And so I am here to say thank you for your past support, and thank you, hopefully, for your continued support.

The other reason why I am here is to ask you to provide \$250,000 for the creation and distribution of the Atomic Veterans Service Medal. As you may recall, for the last 3 years, we in the House have passed in the national defense authorization bill a provision creating a service medal for atomic veterans.

These are people who served our country during a very difficult time and could never talk about their service because it was top secret. In fact, many of them couldn't even tell their doctors that they potentially could have been exposed to radiation. It wasn't until the first George Bush was President and then Bill Clinton that they kind of opened things up and these veterans were able to talk about their service.

They were never recognized at the time for their service to our country, and many of us thought that they deserve some sort of recognition. And so for 3 years in a row, we have passed a provision that would give them that medal. In fact, the last roll call vote we had, every single Member of the House voted for it. And, unfortunately, for 3 years in a row, it continues to get dropped in the—by the Senate during the conference negotiations.

The Pentagon, I am sad to say, has been reluctant to support this idea. They have told me they don't believe in giving medals retroactively, which seems like a strange excuse not to want to honor these veterans. And then I was even told that by honoring these atomic veterans, that somehow we would be diminishing the service of other veterans, which I found, quite frankly, offensive.

And so, you know, we are going to continue to push the authorizers to create this program, but in the meantime, you know, I am coming to you to say, let's begin this. Let's do what is right. Again, these veterans are aging, many of them are dying, and I think they deserve to be recognized, and I think that is the will of the House, and so I hope that you will look favorably upon that request as well.

So I thank you for giving me the opportunity to be here, and I thank you for your service on this committee.

[The written statement of Congressman McGovern follows:]

TESTIMONY OF
U.S. REPRESENTATIVE JAMES P. McGOVERN (MA-02)

SUBCOMMITTEE ON DEFENSE
HOUSE APPROPRIATIONS COMMITTEE

FISCAL YEAR 2019 APPROPRIATIONS
DEFENSE HEALTH PROGRAMS AND OTHER PROGRAMS

I want to thank Madam Chair Granger and Ranking Member Visclosky for allowing me this opportunity to testify in support of the Wounded Warrior Service Dog Program. I would also like to thank the Chair, the Ranking Member, and the Committee for supporting an increase to this Program in Fiscal Year 2018. I ask that the Committee continue to fund this program at \$10 million in Fiscal Year 2019.

In addition, I request that the Committee insert language addressing the benefits of canine therapy for the treatment of PTSD and TBI symptoms. I have included draft language for your consideration at the end of my formal written statement.

I want to express my gratitude to the Subcommittee for their assistance in securing funding for this program since FY15. Already, we have seen so many incredible success stories in which these dogs have helped veterans suffering from post-traumatic stress or physical limitations to reintegrate into the social framework of their families and communities and often reduce their reliance on prescription drugs.

Over the past few years, I've had the opportunity to spend time at the National Education for Assistance Dog Services – or NEADS – located in Princeton, Massachusetts. Like other similar non-profits, NEADS customizes the training of each dog to serve its future owner. Dogs can be trained to retrieve medicine from a refrigerator, turn the lights on and scan an empty

house before the owner enters, guard an owner's back in a public setting, and even wake up an owner from a nightmare.

Nonprofits like NEADS are struggling to meet the growing levels of demand. Thanks to your support, the Wounded Warrior Service Dog Program has allowed these non-profits to help hundreds of additional veterans over the past three years, yet we continue to see long waiting lists of service members in need.

Congress first directed the VA to research the effect of service dogs on veterans with PTSD in 2010. Eight years later, the VA is still conducting research. Meanwhile, the demand amongst veterans for service dogs continues to grow as research conducted by private institutions, such as Purdue University, increasingly demonstrates that service dogs can help treat symptoms of PTSD. Moreover, I guarantee that if you sit down with a veteran who has received a service dog, it will become perfectly clear how helpful these dogs are.

While the VA continues its exhaustive research on the topic, we have wounded veterans who attribute their recoveries to service dogs and other veterans for whom a service dog could be the key. Rather than relegating these veterans to a waiting list, let's continue to support these highly professional non-profits so that they can continue to do what they do best – help our veterans.

I would also like to testify today in support of a military service medal to honor retired and former members of the Armed Forces who are radiation-exposed veterans. I ask that the Committee provide \$250,000 for the creation and distribution of the **Atomic Veterans Service Medal**.

Last fall, for the third consecutive year, an amendment to create this Medal was dropped from the NDAA Conference Report. I find this particularly shocking as this amendment, which I offered with my Republican colleague, Congressman Tom Emmer, was approved by the House by a unanimous vote of 424-0. The House has shown strong support for the Atomic Veterans Service Medal, and now I ask that this Subcommittee provide the necessary funding to honor these Veterans.

Between 1945 and 1962, about 225,000 members of our Armed Forces participated in hundreds of nuclear weapons tests. These GIs were placed in extremely dangerous areas and were constantly exposed to dangerous levels of radiation in performance of their duties. They were sworn to secrecy, unable to even talk to their doctors about their past exposure to radiation.

Thankfully, Presidents Bill Clinton and George H.W. Bush recognized the Atomic Veterans' valiant service, and acted to provide specialized care and compensation for their harrowing duty. In 2007, our allies Great Britain, New Zealand and Australia authorized and awarded medals to honor their Atomic Veterans who served with the United States.

Regrettably, the Pentagon remains silent on honoring the service of our Atomic Veterans, arguing that to do so would diminish the service of other military personnel who are tasked with dangerous missions. Madam Chair, I think this is a pitiful excuse.

Tragically, more than 75 percent of Atomic Veterans have already passed away, never having received this recognition. They served honorably and kept a code of silence that most certainly led to many of these veterans passing away prematurely.

Past Administrations and Congresses have dealt with the thornier issues of legality and compensation. What remains is recognizing these veterans' duty, honor and faithful service to

our nation. And time is running out. I ask that you include the modest sum of \$250,000 to create and confer the Atomic Veterans Service Medal.

Thank you for your consideration of these two requests.

Language Request for FY 19 Defense Appropriations

"The committee is aware that canine therapy for treatment of PTSD and TBI symptoms is a promising alternative or adjunct to pharmaceutical treatment, which can have harmful side-effects. In testimony before Congress, witnesses from the Services were positive about the potential for this treatment, calling canine therapy for PTSD "an emerging area of alternative therapy" that is "beneficial in the support of people with either physical or mental health diagnoses," and that can "help reduce anxiety, lower emotional reactivity, and provide a sense of security." While still experimental, canine therapy has shown effectiveness in treating PTSD and other psychological disorders, from hospitalized psychiatric patients to children with developmental disorders, patients with substance abuse problems, and victims of trauma. The Services' report that service members who participate in their canine programs for PTSD and TBI show more positive social interactions, a decrease in suicidal thoughts, an increased sense of safety, independence, motivation, and self-efficacy. The committee notes that canine therapy is a promising area for further research as a complementary or alternative treatment for the signature wounds of the ongoing conflict. Therefore, the committee provides funds and continues to encourage the Services to initiate or expand their research into canine therapy to validate its therapeutic effectiveness in the treatment of PTSD and TBI."

Ms. GRANGER. Thank you for appearing before us today.

This is an opportunity we have—we can just talk frankly about some things that Members are requesting. And I think that there is—the service dog program is one, everyone is very aware of it, because you see them now and see the difference it makes in the lives of the people, the wounded warriors they are serving, so that is a wonderful request.

The second one, I am as puzzled as you are about the response from the Senate, because it was overlooked, and I think it is a wonderful recognition. So I am certainly very positive about it.

Mr. Visclosky, do you have anything to say about that one?

Mr. VISCLOSEKY. You know, I associate myself with the chairwoman's remarks. And thank you very much for your concern, not only for veterans, but those who need that extra care and recognition.

Do you have any sense at all that someone in the Senate is going to pick that issue up as far as honoring the atomic veterans, Mr. McGovern?

Mr. McGOVERN. We have Senator Markey has introduced the bill over in the Senate, and we are going to continue to work with him to try to see if he can move it in a bipartisan way. But, again, I think there are some Members of the Senate Armed Services Committee, I think staff members in particular, and some people over in the Pentagon who have urged them to basically drop this idea.

Mr. VISCLOSEKY. Yes.

Mr. McGOVERN. And, again, I just—I don't get it. And, you know, if the policy is that we don't retroactively honor—you know, create medals for veterans' service, you know, maybe we ought to take another look at that. But I don't think this opens up the floodgates.

And, again, I am—I think it is particularly urgent because this is an aging population, and a lot of these atomic veterans are no longer with us. And I think they deserve to know that our country is grateful for their service.

Mr. VISCLOSEKY. Thank you. And thank you for taking the time to be here today, and good luck on that initiative.

Mr. McGOVERN. And I just want to say on the service dog, the Wounded Warrior Service Dog Program, you know, I want to thank this committee in particular because this would not be in existence without Chairwoman Granger and Ranking Member Visclosky and the members of this committee. So, I mean, you made this happen, and it is benefiting a lot of veterans. So thank you.

Ms. GRANGER. Thank you very much. Thank you for being here. That concludes today's hearing. The subcommittee is adjourned.

Mr. CARTER. Madam Chairwoman.

Ms. GRANGER. Oh, I am sorry. Mr. Carter.

Mr. CARTER. May I be recognized?

Ms. GRANGER. You may.

Mr. CARTER. These are the people that were out at the nuclear test sites—

Mr. McGOVERN. Yes.

Mr. CARTER [continuing]. That volunteered to be within the blast radius?

Mr. McGOVERN. Right. That is correct.

Mr. CARTER. Well, I kind of agree with you. They ought to get something. Are benefits attached to this medal?

Mr. McGOVERN. No. All it is is a recognition, a medal or whatever is deemed appropriate, but something that would honor their service and recognize their service. That is it.

Mr. CARTER. Thank you for bringing that up.

Mr. McGOVERN. Thank you.

Mr. CARTER. That is very interesting.

Ms. GRANGER. Anybody else?

That concludes today's hearing. The subcommittee is adjourned.

[CLERK'S NOTE.—Written testimony submitted for the record by Congressman Earl L. "Buddy" Carter, Congressman Doug Lamborn, Congressman Beto O'Rourke, Congressman Paul Cook, Congressman Glenn 'GT' Thompson, Congresswoman Barbara Comstock, and Congressman Alan Lowenthal follows:]

Members' Day Testimony - Rep. Earl L. 'Buddy' Carter (1st District of Georgia)

Thank you for this opportunity to share my concerns and priorities for the First Congressional District of Georgia. It's an honor to represent a district rich in military history and home to thousands of active duty military personnel and veterans. With such a diverse set of military equities, I look forward to working with you all to address the needs of our Armed Forces.

As the home to the Atlantic ballistic missile submarine fleet at Kings Bay, I've seen the dedication of our sailors and their families. While the Ohio-class submarines play a critical role in nuclear deterrence, they will soon be reaching the end of their life cycle. We must maintain our nation's undersea strike capability, the most survivable leg of the triad, amid growing threats and advancements. For that reason, I support robust funding for the Columbia-class program to ensure the timely development and deployment of our nuclear submarine fleet.

Virginia-class attack submarines will continue to play a growing role in the nation's submarine fleet, especially as we begin to retire the guided missile submarines in the fleet. The Virginia Payload Module (VPM) is a cost-effective way to preserve our undersea strike capacity and offset the loss of our guided

missile subs. For that reason, I have submitted a request to provide robust funding for the Virginia Payload Module.

Our soldiers have always been able to depend on the close air support provided by A-10s, such as those operated out of Moody Air Force Base. The A-10's capabilities and survivability has been showcased across many engagements. Congressional leadership and the Administration have also reflected this need in their policy priorities which is why I am again submitting a request to fully fund the A-10 platform and any upgrades, including wing replacements.

Combatant commanders have utilized the JSTARS aircraft for accurate real-time information regarding ground movements. Those aircraft are now some of the oldest in the fleet and critically need recapitalization. That is why I have submitted a request to provide robust funding for the JSTARS recap and to give our combatant commanders the tools they need.

The Compass Call platform is also integral to our ability to win, but it is aging and needs to be replaced. While the first new plane of the series can be operational in several years, we have an opportunity to include robust funding for the Compass Call airframe. For that reason, I support a request that will accelerate development and get this force multiplier in the air providing necessary intel and capabilities to our commanders.

Readiness funding continues to be one of the top concerns as expressed by Army leadership. The 3rd Infantry Division, like many other divisions, continues to deploy at a heightened tempo around the globe. Increased access to readiness funding will ensure that our soldiers are prepared for the evolving conflicts around the world. For that reason, I support robust funding to shore up any readiness concerns.

Lastly, the STARBASE program and the National Guard's Youth Challenge Program have helped to better the lives of thousands of kids across the country. These programs educate children and help them pursue new opportunities in their adult life and help troubled youths get their lives back on track. For that reason, I support robust funding to ensure these programs continue to benefit future generations.

I appreciate your attention to these requests and thank you for the opportunity to provide input.

Congressman Doug Lamborn, CO-05
STATEMENT FOR THE RECORD
FY 2019 DEFENSE APPROPRIATIONS - MEMBERS DAY
HOUSE APPROPRIATIONS SUBCOMMITTEE ON DEFENSE
Wednesday, MAY 9, 2018

Introduction

Chairwoman Granger, Ranking Member Visclosky and distinguished members of the subcommittee. Thank you for the opportunity to testify on issues related to defense appropriations for fiscal year 2019.

The qualitative military edge the United States enjoys over foreign militaries, including near-peer adversaries such as Russia and China, is maintained to a large degree through our dominance in space. However, when it comes to human conflict and military planning, the old maxim “the enemy gets a vote” applies to national security space, and those near-peer adversaries have rapidly bolstered their own space capabilities with the explicit intent of denying the United States unfettered access to those force-multiplying assets on which our modern defense apparatus depends. Space is a warfighting domain, regardless of whether or not we wish it so, and we must treat it as one. The U.S. must strengthen our space-warfighting capabilities in order to deter and ultimately win a conflict which extends to space. Congress and the current administration are making great strides to achieve that goal by reforming and improving the national security space enterprise, working to gain back our competitive edge and ensure continued US dominance in space.

Air Force leadership has expressed the need for the Department of Defense to “go faster” in space. This means reorganizing the management of space activities, more effectively training and equipping our forces to defend space, enhancing and bolstering our space assets, and streamlining the acquisition processes for space systems. These efforts must result in integrated, resilient, and affordable space systems operated by well organized, trained, and equipped forces that stand ready to deter and defeat threats in space. My request will help move the DOD toward that objective.

Air Force Satellite Control Network Commercial Augmentation Service

First, this Subcommittee should appropriate an additional \$10.0 million in Air Force Satellite Control Network RDT&E to accelerate transition of an Air Force Satellite Control Network Commercial Augmentation Service. The Department of Defense operates its satellite network from 15 Air Force Satellite Control Network (AFSCN) antennas at seven sites throughout the world. This network is expensive to operate and maintain, is functioning at maximum capacity, and does not have necessary capability to ensure Air Force Space Command and other National Security Space priorities are met today and in the future.

The DOD recognizes commercial augmentation of the AFSCN enhances satellite control network resiliency, increases capacity to support the increasing number of satellites on-orbit, and repurposes scarcely available Airmen to focus on warfighter effects. The Air Force has successfully tested the Commercial Augmentation Service (CAS) project proving the ability to integrate with and leverage commercial satellite control operations. This capability was delivered with a modest investment of ~\$1.6M by the Air Force, and ~\$12.0M by industry.

Commercial augmentation of satellite control operations ensures the AFSCN is dedicated to high priority missions. Further, an operational CAS capability would improve redundancy and resiliency for the warfighter in a high-quality and cost-effective manner by leveraging the existing competition among commercial network providers. CAS can also provide DOD with increased operational security and flexibility by dramatically increasing the diversity of worldwide antennas it can utilize for satellite operations.

I urge the Subcommittee to support this innovative and cost-effective program that will change the way the DOD manages operations of its satellite constellations, leading to greater resiliency, redundancy, security, and flexibility for US space assets.

Statement of Representative Beto O'Rourke (TX-16)

May 9, 2018

House Appropriations Committee, Defense Subcommittee

Chair Granger and Ranking Member Visclosky, today I submit testimony in support of robust funding for an additive manufacturing (AM) training initiative through the Office of the Secretary of Defense (OSD) and the Defense-Wide Manufacturing Science and Technology Directorate. The additional funding to OSD would support America Makes, which is a program of the National Additive Manufacturing Innovation Institute (NAMII) under OSD.

America Makes is a partnership between the Department of Defense (DOD), public research institutions, and private industry that works to facilitate development of AM technology in the U.S.

Additional Fiscal Year 2019 funding would help in the development and standardization of an AM curriculum to teach Americans the information necessary to enter directly into the AM workforce. The program developed with this additional funding would be tailored for current military personnel, veterans, and residents of economically disadvantaged communities. This curriculum would strengthen AM competitiveness in the U.S. and help provide DOD new capabilities in the future.

I hope you consider this training worthy of additional funding over and above the FY19 budget request, and that you will support a program increase of \$10 million for RDT&E, Defense Wide,

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Line 47, BA 03, Defense Wide Manufacturing Science and Technology Program, PE
0603680D8Z, to fund Additive Manufacturing Training.

Thank you for your consideration.

STATEMENT OF
REPRESENTATIVE PAUL COOK
MEMBER OF CONGRESS
SUBMITTED TO THE
HOUSE SUBCOMMITTEE ON DEFENSE
COMMITTEE ON APPROPRIATIONS
ON
MAY 9, 2018

Chairwoman Granger, Ranking Member Visclosky, and Members of the Defense Subcommittee. Thank you for providing me and other Members of the House with the opportunity to provide written testimony to the Subcommittee on issues that are important to our national security. As in years past, I would have preferred to have appeared in person, but as a member of the House Armed Services Committee I will be participating in our Full Committee Mark-up of the FY19 National Defense Authorization Act.

I wanted to highlight the Central Test and Evaluation Investment Program (CTEIP) that develops critically needed, high priority test and evaluation capabilities for joint/multi-Service requirements. CTEIP's investment approach consolidates service, department, and other government agencies' needs to maximize joint testing efforts and avoid unwarranted duplication of test capabilities. The Office of the Secretary of Defense requested \$258.7 million CTEIP in its fiscal year 2019 budget request to Congress.

As expressed in the budget request, the CTEIP program finances threat system simulator development efforts to improve integration, reduce potential duplication, and ensure that accurate, cost-effective representations of threat systems are available to support testing and training. The US Army Threat

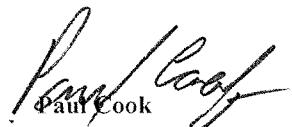
Systems Management Office (TSMO) is responsible for the acquisition, development, fielding, operations and sustainment of threat equipment for Army testing and training. Funding to acquire, upgrade and maintain threat systems routinely comes from the CTEIP budget line under the Integrated Threat Force program.

\$3.0 million is urgently needed in fiscal year 2019 for TSMO to improve performance of future ground radar, electronic warfare, and cyber threat systems using modern commercial geographic information system (GIS) tools. With emphasis on providing operational threat systems support to realistic testing, TSMO is challenged to incorporate software and technology to reduce man-power requirements, decrease time to prepare data and information products for evaluation, increase data collection capabilities, and cut the time necessary to process exercise data into final reports. Currently, data is collected using various methods, including laborious manual data entry into spreadsheets and word processing documents.

If provided by your Committee, these funds would be competitively awarded, and used to further the Integrated Threat Force Geospatial Architecture by providing the necessary hardware, software, and personnel to advance the efforts of this critical enabling technology.

So my recommendation to you today is to appropriate \$261.7 million for the Central Test and Evaluation Investment Program, a generic program increase of \$3.0 million for Integrated Threat Force Geospatial Architecture, which is an on-going project included in the Department of Defense's budget justification material to the Congress, and include the report language submitted with this request directing funds for such operational needs.

Thank you again for the opportunity for me to bring this important issue to the Subcommittee's attention today.



Paul Cook
Member of Congress

**The Honorable Glenn ‘GT’ Thompson
(PA-05)**

Testimony before the House Appropriations Subcommittee on Defense
Member Hearing on Appropriations for Fiscal Year 2019
Wednesday, May 9, 2018

Chairwoman Granger and Ranking Member Visclosky:

Good afternoon and thank you for the opportunity to share my priorities for Fiscal Year 2019 Defense appropriations. As the father of an Army Staff Sergeant who has received a Purple Heart during Operation Iraqi Freedom, and a strong supporter of our nation’s defense programs, I appreciate the Subcommittee’s willingness to receive testimony from non-committee members.

I recognize the challenges placed before the Subcommittee and appreciate your ongoing commitment to our soldiers, sailors, airmen, and marines. At the end of the day it is these troops that are on the front lines defending our freedoms, so it is necessary to equip them with the best tools possible.

We have the opportunity to increase the size and scope of our military for the first time in years. As we move toward this goal, we are also facing new challenges across the globe. One of these challenges is the prevalence of Russian-sourced energy fueling U.S. military bases in Europe. Russia has demonstrated its willingness to cut off energy to rival nations as a means to accomplishing a political goal in the past, and it is a threat to our national security to put our troops and facilities in a position that is subject to the political whim of Russian actors.

Specifically, the construction of the Landstuhl Army Regional Medical Center in Germany is of increasing concern. The Army Corps of Engineers is in the decision-making process to determine how this facility will be fueled and Russian-sourced natural gas is being considered. This medical facility will become the most strategic facility of its kind, serving the needs of troops on three separate continents. Allowing it to be fueled by Russian natural gas is irresponsible and a serious danger to American troops and our national security.

I propose a simple solution: consider domestically-sourced energy. Allowing American energy producers to compete for contracts to fuel U.S. military bases abroad will create jobs here at home, ensure a cost effective solution, and most importantly, eliminate the threat that Russian-sourced energy places on our security interests abroad.

A language request outlining this proposal was sent to the Committee and I respectfully request your consideration.

Strategically, we must ensure Americans are protected from Russian threats and giving our troops the tools they need on the tactical level are extremely important in this endeavor. Aerial transport of troops is a key aspect of maneuverability that allows us to win battles, but some of these transport vehicles require updates. The CH-47 Chinook is in drastic need of Improved Vibration Control Systems (IVCS) to reduce vibrations throughout the fuselage. Reducing these vibrations leads to improved aircrew performance, extended component life, and additional

flexibility to the operational commander. For these reasons, I respectfully request \$29.8 million for CH-47 Chinook Improved Vibration Control Systems.

Operating undersea in a stealthy environment allows our Navy to protect the homeland by increasing our global strike capability. As the Ohio Class ballistic missile submarines (SSBN) reach the end of their shelf life and begin to be recalled, the Columbia Class SSBN is poised to take its place. Construction on this class has already begun, but steady funding is necessary to prevent a gap in our SSBN capabilities. Therefore, I respectfully request \$705 million in Research, Development, Testing and Evaluation, \$3 billion for Shipbuilding and Conversion, and \$15 million for Advanced Procurement and Supplier Base Reconstruction.

The Virginia Class Submarine (SSN) provides the U.S. Navy with state-of-the-art undersea strike capabilities and enhanced intelligence-gathering abilities. As the Navy continues to introduce two new SSNs into the fleet every year, now with the Virginia Payload Module (VPM), which triples the SSNs current firepower, maintaining sufficient funding for this program is more important than ever before. I respectfully request funding in the amount of \$2.7 billion (\$1,811,000,000 in Advanced Procurement, \$985,000,000 in Economic Order Quantity) for the Virginia Class Attack Submarine.

As a former healthcare professional with nearly three decades of experience, I fully recommend that the Department of Defense build on previous discoveries and maintain support for vital research programs. These include the Multiple Sclerosis Research Program, the ALS Research Program, the Breast Cancer Research Program, the Ovarian Research Program, and the Peer Reviewed Orthopedic Research Program. There is no doubt that making critical investments in medical research at the federal level will improve the well-being of our nation as a whole.

Finally, we must keep in mind that more than 80,000 American Citizens who served in the Vietnam War, Korean War, and World War II are still missing in action. The families and friends of these Americans deserve no less than our greatest efforts to bring their loved ones home. Therefore, I respectfully request that the Subcommittee supports robust funding for the Defense POW/MIA Accounting Agency in Fiscal Year 2019.

Thank you again for your continued commitment to the issues within the jurisdiction of your Subcommittee and the Committee as a whole. I appreciate your consideration and look forward to working with you to support the needs of our military.

TESTIMONY OF CONGRESSWOMAN BARBARA COMSTOCK
U.S. HOUSE OF REPRESENTATIVES
APPROPRIATIONS COMMITTEE, DEFENSE SUBCOMMITTEE
MAY 9, 2018

Thank you to Chairwoman Kay Granger, Ranking Member Peter Visclosky, and Members of the Defense Subcommittee for accepting my testimony regarding defense appropriations for Fiscal Year 2019. While I previously submitted requests through bipartisan letters with my colleagues, I would like to highlight three additional projects I believe warrant special attention from the Committee.

First, commercial satellite communications (COMSATCOM) is vital to our nation's military and national security and impacts all elements of Diplomatic, Information, Military and Economic power. Appropriations for integrated COMSATCOM and MILSATCOM enterprise-level architecture is needed by the U.S. government to meet growing warfighter demand for bandwidth and to enhance flexibility of operations in a cost-effective way. Planning for long-term procurement of COMSATCOM instead of spot-market purchases of historical broadcast-centric leases will reduce costs and allow the Department of Defense (DoD) to fully and rapidly leverage innovative new technologies to strengthen our nation's C4ISR capabilities.

Second, I would like to advocate for an additional \$10 million in Air Force Satellite Control Network RDT&E to accelerate transition of an Air Force Satellite Control Network Commercial Augmentation Service. The DoD operates its satellite network from 15 Air Force Satellite Control Network (AFSCN) antennas at seven sites throughout the world. This network is expensive to operate and maintain, is functioning at maximum capacity, and does not have necessary capability to ensure Air Force Space Command and other National Security Space priorities are met today and in the future.

The DoD recognizes commercial augmentation of the AFSCN enhances satellite control network resiliency, increases capacity to support the increasing number of satellites on-orbit, and repurposes scarcely available Airmen to focus on warfighter effects. The Air Force has successfully tested the Commercial Augmentation Service (CAS) project proving the ability to integrate with and leverage commercial satellite control operations. This capability was delivered with a modest investment of ~\$1.6M by the Air Force, and ~\$12.0M by industry.

Commercial augmentation of satellite control operations ensures the AFSCN is dedicated to high priority missions. Further, an operational CAS capability would improve redundancy and resiliency for the warfighter in a high-quality and cost-effective manner by leveraging the existing competition among commercial network providers. CAS can also provide DOD with increased operational security and flexibility by dramatically increasing the diversity of worldwide antennas it can utilize for satellite operations.

Finally, I encourage the Committee to provide an additional \$8.425 million to Defense Enterprise Energy Information Management to protect critical infrastructure with the feasibility and advisability of applying new, innovative methodologies or engineering approaches to improve the defense of industrial control systems against cyberattacks, increase the resilience of

military installations against cybersecurity threats, and prevent or mitigate the potential for high-consequence cyberattacks that will inform future requirements for the development of such control systems. With the imminent threat to the industrial control systems by country actors, I favorably request the Committee to appropriate the necessary funds to support the Pilot Program highlighted in the FY17 NDAA Section 1650 and start the Risk Management Framework (RMF) process which would deliver Initial Inventory of OT, Mapping the Mission to TCAs and developing supporting infrastructure diagrams at each of the 55 military installations identified by the Department of Defense.

Through these programs, the United States can strengthen its national security interests by strengthening the U.S. military architecture, space program, and cyber security.

ALAN LOWENTHAL
17th District, California

COMMITTEE ON NATURAL RESOURCES
Ranking Member, Subcommittee on Energy
Subcommittee on Water and Environment
Subcommittee on Federal Lands

COMMITTEE ON
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Subcommittee on Highways and Transit
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May 7, 2018

The Honorable Kay Granger
Chairwoman
Committee on Appropriations,
Subcommittee on Defense
U.S. House of Representatives
Washington, DC 20515

The Honorable Peter Visclosky
Ranking Member
Committee on Appropriations,
Subcommittee on Defense
U.S. House of Representatives
Washington, DC 20515

Dear Chairwoman Granger and Ranking Member Visclosky:

As you continue work on the FY 2019 Defense appropriations bill, I urge you to include the following appropriations report language:

CONOPS Development for Air-Launched Space Launch Vehicle

"The Department of Defense (DoD) needs to better understand how the specialized capabilities inherent in an air-launched space launch vehicle can be exploited to ensure National Security Space mission success. Commercially offered launch capabilities will be available within the next year that offer the opportunity to launch from a mobile air-launched pad (carrier aircraft). The benefits of an air-launch are mostly obvious: launch is independent of the traditional launch range – making range availability a non-issue; since the carrier aircraft can operate through or around weather – traditional weather delays are avoided; because the carrier aircraft will not need post launch repair, multiple launches can occur in a single day; the launch vehicle can be launched from a location that provides the optimal orbital mechanics – which maximizes the satellite's Delta-v. For the National Security Space community, there are capabilities of the carrier aircraft that can provide benefits beyond those listed above. The DoD needs to fully investigate and develop Concept of Operations (CONOPS) for all of the opportunities provided by the game-changing flexibility of a mobile air-launched pad."

Justification

Fully leveraging the new Space Rapid Capabilities (SpRCO) office to include funding for CONOPS Development for Air-Launched Space Launch Vehicles will support U.S. Strategic Command (USSTRATCOM) three identified needs:

- 1) to rapidly augment existing space capabilities when needed to expand operational capability;
- 2) to rapidly reconstitute/replenish critical space capabilities to preserve "continuity of operations" capability;
- 3) to rapidly exploit and infuse space technological or operational innovations to increase U.S. advantage.

Thank you for your consideration of my request.

Sincerely,

A handwritten signature in black ink, appearing to read "Alan Lowenthal".

Alan Lowenthal
Member of Congress

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