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S. HRG. 115–674, PT. 1

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

HEARINGS

BEFORE THE

COMMITTEE ON ARMED SERVICES
UNITED STATES SENATE

ONE HUNDRED FIFTEENTH CONGRESS

SECOND SESSION

ON

S. 2987

TO AUTHORIZE APPROPRIATIONS FOR FISCAL YEAR 2019 FOR MILITARY ACTIVITIES OF THE DEPARTMENT OF DEFENSE AND FOR MILITARY CONSTRUCTION, TO PRESCRIBE MILITARY PERSONNEL STRENGTHS FOR SUCH FISCAL YEAR, AND FOR OTHER PURPOSES

PART 1

U.S. NORTHERN COMMAND AND U.S. SOUTHERN COMMAND
U.S. CYBER COMMAND
U.S. EUROPEAN COMMAND
U.S. CENTRAL COMMAND AND U.S. AFRICA COMMAND
U.S. PACIFIC COMMAND
U.S. STRATEGIC COMMAND
DEPARTMENT OF ENERGY'S ATOMIC ENERGY DEFENSE PROGRAMS
U.S. TRANSPORTATION COMMAND
ARMY POSTURE
NAVY POSTURE
AIR FORCE POSTURE
DEPARTMENT OF DEFENSE BUDGET POSTURE

FEBRUARY 15, 27; MARCH 8, 13, 15, 20, 22; APRIL 10, 12, 19, 24, 26, 2018



Printed for the use of the Committee on Armed Services

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U.S. NORTHERN COMMAND AND U.S. SOUTHERN COMMAND ● U.S. CYBER COMMAND ● U.S. EUROPEAN COMMAND ● U.S. CENTRAL COMMAND AND U.S. AFRICA COMMAND ● U.S. PACIFIC COMMAND ● U.S. STRATEGIC COMMAND ● DEPARTMENT OF ENERGY'S ATOMIC ENERGY DEFENSE PROGRAMS ● U.S. TRANSPORTATION COMMAND ● ARMY POSTURE ● NAVY POSTURE ● AIR FORCE POSTURE ● DEPARTMENT OF DEFENSE BUDGET POSTURE

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DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, FEBRUARY 15, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

UNITED STATES NORTHERN COMMAND AND UNITED STATES SOUTHERN COMMAND

The committee met, pursuant to notice, at 9:32 a.m. in Room SD–G50, Dirksen Senate Office Building, Senator James M. Inhofe presiding.

Committee members present: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Sasse, Reed, Nelson, McCaskill, Shaheen, Blumenthal, Donnelly, Hirono, Kaine, King, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. We will call the meeting to order.

We are going to receive testimony from two of my favorite people. General Lori Robinson—I have to say that I taught her everything she knows from when she was the wing commander at Tinker Air Force Base in Oklahoma. Kurt Tidd, Commander for the U.S. Southern Command [SOUTHCOM].

I think there is a lot of overlap—we have talked. All three of us have talked about this—between the north and the south command. I think that is one reason that Senator McCain would want to have these meetings together.

The new National Defense Strategy, the NDS, identifies protecting the Homeland, sustaining American advantages in the western hemisphere as key priorities even as the DOD [Department of Defense] focuses on the rising challenge of great power competitors. As we have seen from increasing economic and military efforts by China and by Russia to gain a foothold in the Americas, the boundaries between great power competition and unconventional threats are increasingly blurred. I think that is one reason when General Dunford made the observation that we are losing our qualitative and quantitative edge on China and Russia.

General Robinson, you are tasked with addressing the missile and nuclear threats that we face, and while I am encouraged by recent efforts to bolster our Homeland missile defense system, more

needs to be done to address the ballistic and cruise missile threats. I think particularly recently we have observed others gaining talents that we were not convinced that they already had.

Admiral Tidd, in SOUTHCOM, you are on the front lines combating illicit networks, smuggling drugs, people, weapons, and money and destabilize every country along the way. You also face involvement in external actors that present unique challenges in the theater and lack sufficient resources.

I think that we have a lot in common, and for that reason, we are having these together. We look forward to your testimony. I appreciate the time that each one of you spent in our office talking about the challenges you guys have.

Senator Reed?

STATEMENT OF SENATOR JACK REED

Senator REED. Well, thank you very much, Mr. Chairman. Let me join you in welcome our witnesses: General Robinson and Admiral Tidd. Thank you for your extraordinary service to the nation. Please convey our thanks to the men and women in your commands who, as we all know, do the job every day for us. Thank you.

General Robinson, your mission is to protect the Homeland to deter and defeat attacks on the United States and support civil authorities in mitigating the effects of attacks and natural disasters. We saw this demonstrated in DOD's support to the States and territories affected by hurricanes, wildfires, and floods in this past year, and we thank you for that.

You are also dual-hatted as the Commander of the North American Aerospace Defense Command, NORAD, which brings unique responsibilities and partnering opportunities with Canada to deter and defend against threats to our nation.

You are also responsible for the operation of our Homeland ballistic missile defense system. We look forward to hearing about your priorities for further improvements to the ground-based missile defense system. This is particularly important in light of the growing threat from North Korea.

Lastly, your relationship with the military leadership in Mexico, along with your collaboration with Admiral Tidd and other federal agencies, is crucial to promoting security along our southern border. A number of problems at the border originate in the SOUTHCOM area of operations and efforts to address those problems require a whole-of-government approach.

Admiral Tidd, you are on the front lines of a significant threat facing our nation, the opioid crisis. In 2016, we saw 64,000 deaths from drug overdoses, an increase from 52,000 in 2015. What has made the crisis worse is that more and more Americans addicted to opioids are turning to other dangerous drugs that are flowing into our borders from Central and South America and Asia. The flow of heroin and cocaine and other drugs like fentanyl into the country is exacerbating this crisis. Cocaine production in Colombia is up, as we spoke in our office, and is destabilizing the countries of the Northern Triangle as it works our way to our border and destroys lives here.

I was very encouraged to hear that SOUTHCOM held an opioid conference last week which brought all the government stakeholders together to work on this problem. Because it is important to recognize, while our military has an important role to play in the fight against narcotics in this country, we will only win against this threat with adequate resources for domestic agencies such as the Food and Drug Administration, the Drug Enforcement Administration, and the Department of Health and Human Services. Admiral Tidd, I look forward to hearing from you about the outcome of the conference and about SOUTHCOM's effort to counter the flow of narcotics into the United States.

In addition, China and Russia have been increasingly active in Central and South America, committing millions of dollars of investment and partnering with Latin American militaries. Admiral Tidd, as you noted in your written statement, China has pledged $500 billion in trade with Latin American countries and $250 billion in Chinese direct investment over the next 10 years. Increased economic cooperation and the continued provision of financing and loans that appear to have no strings attached provide ample opportunity for China to expand its influence over key regional partners and promote unfair business practices and labor practices. I am concerned because of the cuts to our State Department and USAID [United States Agency for International Development], we are not doing everything we can to position ourselves as a partner of choice for our neighbors in the region. Admiral Tidd, I would like to hear from you on how China and Russia are investing in Central and South America and how they pose a national security threat to the United States.

Finally, we are all observing the humanitarian crisis in Venezuela. We would like your perspectives on how much longer the regime can survive and how the crisis will affect neighboring countries. I am especially concerned about Colombia, which is already struggling to implement its disarmament, demobilization, and reintegration process and is ill-equipped to deal with a long-term refugee problem in the border region.

General Robinson, Admiral Tidd, again thank you for your service.

Senator INHOFE. Thank you, Senator Reed.

We will go ahead and hear opening statements by both of our witnesses and try to confine them to 5 minutes, if you can. Your entire statement will be made a part of the record. Let us start with you, General Robinson.

General Robinson, I just found out that your husband was best friends and a fellow F–16 pilot with my best friend, Charles Sublett, in Oklahoma, and I was not aware of this. I do not know how that went unnoticed.

STATEMENT OF GENERAL LORI J. ROBINSON, USAF, COMMANDER, UNITED STATES NORTHERN COMMAND AND NORTH AMERICAN AEROSPACE DEFENSE COMMAND

General ROBINSON. Well, sir, you know, when you bring him to the witness table, he has to tell the truth, noting but the truth.

Senator INHOFE. I will share that was Charles.

General ROBINSON. Yes, sir, please do. Please do.

First of all, I would really like to say—we know that he is a figure here—to Senator McCain and his family and that I know all of our thoughts and prayers are with him. I just wanted to extend that. I think that is incredibly important.

Senator Inhofe, Senator Reed, all the distinguished members of the committee, I am honored to join you today. David and I are honored to join you today to testify alongside my friend, my shipmate, more importantly, my wingman, Kurt Tidd. He and I do things arm in arm.

The year 2017 was a challenging year. NORTHCOM and NORAD addressed proactive actions by our adversaries while simultaneously providing defense support to civil authorities during an historic series of natural disasters that required significant military capabilities and military manpower.

However, I will say that those challenges were definitely handled by a team of absolute professionals. I cannot tell you, sir, how much I am proud to represent all of them here today.

In my 21 months as the Commander of NORAD and U.S. Northern Command, I have been so impressed by the dedication and vigilance shown by the soldiers, sailors, airmen, marines, coast guardsmen, civilians, Americans, and Canadians who stand ready to defend our nations and our fellow citizens.

Looking forward, I see no reason to believe that the threats to our Homeland will decrease. Our adversaries continue to extend their operational reach and are developing new capabilities to range targets in North America and in Canada.

Our preparation for these threats relies on a dependable budget. We appreciate all that this committee has done to help reach the 2-year budget agreement. In 2018, National Defense Strategy recognizes a return to great power competition and lays out a long-term strategy for addressing provocative behavior by China and Russia.

In NORAD and U.S. Northern Command, we understand the urgency of keeping pace with these evolving threats. We also recognize that North Korea represents the most immediate threat to our Homeland and therefore remains NORTHCOM's highest priority. In the past year, Kim Jong-un has demonstrated several successful ICBM [Intercontinental Ballistic Missiles] tests. We continue to watch their developments closely and are prepared to defend the United States. I want to assure this committee today that I am confident that I can defend the United States.

While I am confident that we can defeat this threat today, it is critical that we continue to improve the ballistic missile defense enterprise with emphasis on the development of improved sensor networks, combined with interceptor capability and capacity and reliability. We continue to work with the Missile Defense Agency, the intelligence community, and other combatant commands to ensure our collaborative effort in outpacing the threat.

Russia continues to modernize its long-range bombers and its submarines and has developed new cruise missiles with the capability to hold targets at risk at ranges that we have not seen before. To defend against advanced cruise missiles, it is important that we continue to make prudent and savvy investments in advanced sensors and defensive weapon systems. The strategic ad-

vancements in Russian submarine fleets to demonstrate their capability to threaten our Homeland for the years to come. The threats are the most serious. However, we remain vigilant against the adapting threat of terrorism, as well as unpredictable natural disasters.

As we review the 2017 hurricane response and prepare for the 2018 season, we are working with our mission partners to include the active, guard, reserve forces to incorporate the lessons learned to ensure that we provide our best support to lead federal agencies.

With respect to Canada, we are building interoperability across domains with a tri-command framework that is comprised of NORTHCOM, NORAD, and the Canadian Joint Operations Command. This arrangement allows further planning integration while preserving our ability to conduct unilateral missions.

With respect to Mexico, our military-to-military relationship with the Mexican secretariats of national defense, SEDENA and SEMAR, is unbelievably strong. We focus on illuminating the pathways used to transit illicit goods with my partner here, Admiral Tidd, with our interagency partners, SOUTHCOM and SOCOM [Special Operations Command]. Theater security cooperation is an essential part of strengthening continental defense and builds relationships essential for future cooperation.

By the way, this year we have the 60th anniversary of NORAD. Throughout its long history, this binational command has seen several evolutions in the air domain, and we are proud of that. The men and women of United States Northern Command and NORAD stand united in a common purpose ready to face the threats of the United States and Canada today, and we are evolving to face the threats of tomorrow.

I need all of you to know that we have the watch, but I also need you to know while, Senators, today you are going to ask about me and about our capabilities and the things that we need—I want you to know that we could not do it without our families. If it was not for our families and our steadfast things that keep us grounded, we would not be able to be where we are today. I want to say thank you to my husband, who is here today representing all the families of United States NORAD and Northern Command, because without them, we would not have the standard.

So, Senator, back to you.

[The prepared statement of General Robinson follows:]

STATEMENT OF

GENERAL LORI J. ROBINSON, UNITED STATES AIR FORCE

COMMANDER,

UNITED STATES NORTHERN COMMAND

AND

NORTH AMERICAN AEROSPACE DEFENSE COMMAND

BEFORE THE

SENATE ARMED SERVICES COMMITTEE

15 FEBRUARY 2018

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INTRODUCTION

Chairman McCain, Ranking Member Reed, and distinguished members of the Committee, thank you for the opportunity to appear before you today as the Commander of United States Northern Command (USNORTHCOM) and North American Aerospace Defense Command (NORAD). As the Commander of two unique but complementary commands, I am honored to lead a truly remarkable team of professionals and patriots committed to defending our nations against an ever-expanding array of threats. I am also deeply grateful for this Committee's support, especially in light of the wide range of threats and challenges addressed by USNORTHCOM and NORAD.

As USNORTHCOM and NORAD look to the future, it is increasingly necessary to assess the potential for seemingly far-flung events to unfold in ways that have a direct effect on our homeland defense missions. Adversaries such as North Korea continue to field advanced weapons systems, often at an unexpectedly rapid pace of development, while China and Russia have expanded their military presence into areas outside their traditional areas of operations. The long-term consequences of these developments remain to be seen, but in an environment in which the only constant is change, it is certain that defending our homelands increasingly relies on a modern, ready, and well-trained force, along with innovative thinking and close collaboration across borders, agencies, and boundaries.

STRATEGIC ENVIRONMENT

The threats our nations face continue to evolve. An increasing number of foreign states are developing new ways to hold our homeland at risk in an effort to offset Western military advantages and limit our options in a crisis. Meanwhile, transnational criminal organizations continue their efforts to transport illicit goods and across our borders and engage in migrant

smuggling and human trafficking over sophisticated networks that exploit the physical and organizational gaps in our security apparatus.

NORTH KOREA

Over the last year, Kim Jong Un's pace of weapons testing, defiance of international norms, and deliberate efforts to reduce our indications and warning have established North Korea as the most immediate strategic threat to the United States. I testified last year I was concerned Kim Jong Un's willingness to fail in public would eventually enable him to develop a viable weapon system that could threaten the continental United States. That development has continued at an extraordinarily rapid pace, and in 2017, North Korea successfully flight tested such an intercontinental ballistic missile on three occasions, demonstrating for the first time a credible capability to hold the United States at risk.

Kim Jong Un's possession of a viable intercontinental ballistic missile represents an obvious threat to the United States, and close collaboration with the intelligence community, the Missile Defense Agency, and fellow combatant commands remains essential to outpace North Korea's technological development and deception programs. I am grateful to the members of this Committee for your continued investment in the technology and capabilities necessary to defend the United States against a North Korean threat that is only increasing with time. Adding to the capabilities that provide advanced indications and warning of missile launches will continue to be a priority for USNORTHCOM as North Korea adds capability and capacity and improves its denial and deception programs.

RUSSIA

With a full suite of delivery platforms and weapons systems capable of ranging targets throughout the United States and Canada, Russia remains the only existential air domain threat our two nations face. Russian leaders regularly exercise conflict with the United States and are investing heavily to modernize their forces and develop novel weapons to ensure their ability to hold the United States and Canada at perpetual risk.

Russian out-of-area flight activity has declined since the record levels we observed during the 2014 Ukraine crisis, but Russian heavy bombers continue to fly off our coastlines on a periodic basis, including the series of patrols that NORAD fighters intercepted near Alaska last April and May. Russia has also been cycling its aging bombers through a modernization program that enables them to carry a new generation of advanced cruise missiles that have been proven in combat against targets in Syria.

Russia also launched next-generation cruise missiles against targets in Syria from ships and submarines in 2016 and 2017 and is fielding stealthy new naval platforms, including the Severodvinsk-class guided missile submarine and new Dolgorukiy-class ballistic missile subs. Together, these advancements represent a significant investment by the Russian government in their strategic fleets that are likely to hold targets at risk in the United States and Canada for years to come.

CHINA

China is pursuing a comprehensive military modernization program that includes a rapid expansion of its strategic forces intended to deter an attack from the United States by holding our homeland at risk. Over the last decade, China has supplemented its modest silo-based ballistic

missile force with dozens of road-mobile intercontinental ballistic missiles and operationalized its first class of ballistic missile submarines. As part of an effort to demonstrate global reach and influence, China's navy has developed a pattern of sending ships to "distant oceans," and in July of this year, we saw the first Chinese intelligence collection ship operate near the United States. This followed the transit of a small group of Chinese ships through the Aleutian Islands in September 2015, the first-ever instance of Chinese naval vessels operating in the Bering Sea.

IRAN

Iran is not yet able to strike the United States with strategic weapons. Nonetheless, Tehran has expended significant resources on its ballistic missile, space launch, and civil nuclear capabilities and could develop an intercontinental ballistic missile relatively quickly if its leaders chose to do so. Currently, Iran retains the ability to conduct attacks in our homeland via covert operations and terrorist proxies.

THREAT NETWORKS

Finally, foreign terrorist groups remain committed to attacking the United States, either directly or by inspiring homegrown violent extremists to act in their stead. Despite their recent territorial losses, ISIS leaders—along with their more patient counterparts in al Qa'ida—remain highly adaptive foes who are largely immune to traditional means of deterrence. I also remain concerned about the presence of Transnational Criminal Organizations and adaptive threat networks in the Western Hemisphere, which undermine the rule of law and create vulnerabilities that could be exploited by our adversaries. While there is no evidence of collaboration between Transnational Criminal Organizations with foreign terrorists, the illicit pathways established by

these groups could be leveraged by a variety of actors in ways that undermine our national security.

USNORTHCOM AND NORAD

USNORTHCOM and NORAD are separate commands with common purpose, as USNORTHCOM defends the United States against land- and sea-based threats and intercontinental ballistic missiles, while NORAD defends the United States and Canada against threats in the air domain.

Established in the aftermath of the 9/11 attacks, USNORTHCOM is the U.S. geographic combatant command responsible for operations in North America, to include The Bahamas. For over 15 years, USNORTHCOM has defended the United States through the execution of no-fail missions such as intercontinental ballistic missile defense and defense support of civil authorities.

NORAD is the bi-national United States and Canadian command responsible for aerospace warning, aerospace control, and maritime warning in the United States and Canada. In May of this year, we will celebrate the 60th anniversary of NORAD's establishment and honor the proud legacy of a unique organization that has drawn its strength from the unbreakable bond between our nations. U.S. and Canadian personnel work side-by-side in the combined USNORTHCOM and NORAD headquarters and in each of the NORAD regions in the United States and Canada.

NORAD represents the gold standard for military collaboration, and its mission continues to be of vital importance to the defense of the United States and Canada as our adversaries continue to modernize their arsenals and develop advanced weapons systems, to include

upgraded bombers and advance cruise missiles capable of holding the United States and Canada at risk.

HOMELAND DEFENSE

BALLISTIC MISSILE DEFENSE

In light of the strategic threat presented by North Korea, defending the United States against intercontinental ballistic missiles remains USNORTHCOM's highest priority mission. The rapid advancement of the North Korean intercontinental ballistic missile is my primary focus, although I also continually monitor Iranian technology programs that could present a threat in the future.

I am confident the Ground-based Midcourse Defense system can currently defend the United States from the threats posed by North Korea, but we must take prudent steps to remain in a position of relative technological advantage. I support the Department of Defense's efforts to improve the ballistic missile defense enterprise, and I continue to prioritize improvements to the intercontinental ballistic missile defense sensor architecture to enhance system resiliency and target discrimination, followed by improvements to interceptor reliability and lethality, along with continued reassessment of our interceptor capacity.

As our adversaries develop and field more sophisticated intercontinental ballistic missiles, improved target discrimination will improve the likelihood of a successful engagement. Upgrades to our ability to distinguish re-entry vehicles from non-lethal missile components will significantly improve engagement efficiency while maintaining required effectiveness.

Improved discrimination capability will increase the likelihood of a successful intercept, and the Missile Defense Agency is developing additional radars such as the Long Range Discrimination Radar in Alaska and a persistent radar on Hawaii, both of which will provide

improved target discrimination and a more survivable sensor network. In November, the Missile Defense Agency emplaced the last of the 44 ground-based interceptors in our inventory, while continuing their important efforts to improve interceptor reliability in the fielded fleet while developing new variants for future deployment.

In light of the mounting challenges of defending the United States against intercontinental ballistic missile attack, I am grateful to the defense committees for approving the Department's FY17 above-threshold reprogramming and supporting the budget amendment that will increase the Ground-based Midcourse Defense system's capacity and capability. That investment in improved target discrimination and more reliable kill vehicles will improve our ability to defend the homeland. I will continue to work with my mission partners in the Missile Defense Agency, the intelligence community, and fellow combatant commands to identify and prioritize additional initiatives that will keep us on or ahead of the threat.

As part of that effort, USNORTHCOM supported the Office of the Secretary of Defense in updating the Missile Defense Review. This foundational review will provide overarching policy direction for the missile defense enterprise, and I support its near- and long-term initiatives to ensure we remain ahead of our adversaries. As the warfighter responsible for the defense of the United States, USNORTHCOM will continue to work with our fellow combatant commands to integrate offensive and defensive capabilities as part of coherent strategy to defeat the missile threats facing our nation.

AEROSPACE WARNING AND AEROSPACE CONTROL

Since its establishment in May of 1958, NORAD has defended Canadian and U.S. airspace against an ever-evolving range of threats. Originally focused on preventing Soviet bombers from reaching targets inside the United States and Canada with nuclear gravity bombs,

this unique bi-national command has kept our airspace secure and monitored our maritime approaches while constantly looking to the future in order to adapt to new technologies and outpace emerging threats. From the Cold War, through the aftermath of 9/11, and into the modern era, Canadians and Americans have stood shoulder-to-shoulder in defense of our skies, our cities, and our citizens.

NORAD's original mission remains as important as ever, as seen on 20 April 2017, when United States F-22 Raptors and Canadian CF-18 Hornets conducted a textbook intercept of two Russian TU-95 BEAR-H bombers that had penetrated the North American Air Defense Identification Zone and the Canadian Air Defense Identification Zone. That safe and professional intercept was the direct result of constant planning, coordination, and training between various NORAD commands over the course of many years.

The ability to deter and defeat threats to our citizens, vital infrastructure, and national institutions starts with successfully detecting, tracking, and positively identifying targets of interest approaching and within U.S. and Canadian airspace. As part of an ongoing effort to defend the United States and Canada against a wide range of airborne threats—from modern strike aircraft and advanced air- and submarine-launched cruise missiles to small drones—NORAD planners continue to develop a modern three-phase Homeland Defense Design that links advanced sensors capable of detecting and tracking potential threats with weapons systems capable of neutralizing targets identified as hostile.

LOW RADAR CROSS SECTION THREATS

This Homeland Defense Design will play an ever-more important role in defending the homelands against modern cruise missiles and other unmanned aerial systems. Small commercial drones, light aircraft, and advanced cruise missiles each present challenges to our air defense

systems due to their low radar cross sections and corresponding ability to evade detection by legacy radars. Whether those technologies are purpose-built or are unintentionally exploitable by bad actors, the potential threat from airborne platforms with small radar signatures will become commonplace in the coming years as advanced missile technology proliferates and commercial unmanned systems become ever more readily available. From a threat-assessment perspective, low radar cross section systems are of particular concern as they have the potential to hold our vital institutions and infrastructure at risk due to their ability to evade detection, tracking, identification, and, if necessary, engage targets identified as hostile.

CRUISE MISSILE DEFENSE

Russia has prioritized the development of advanced cruise missiles capable of holding targets within North America at risk from distances not previously seen. These systems present an increasing threat to North America due to their long range, low radar cross section, and the limited indications and warnings likely to be seen prior to a combat launch. While the likelihood of a Russian kinetic strike against the United States and Canada is currently low, it is prudent to invest in advanced sensors and defensive weapons systems to protect our nations' vital assets.

I have confidence in the layered approach provided by overlapping air defense systems. However, I am concerned about the potential for those advanced cruise missiles, which can be launched from bombers or submarines at much greater ranges than legacy systems, to penetrate our air defense network due to their expanded range, low visibility, and limited radar cross section. The significantly improved range of these missiles has reduced the indications and warnings we are likely to receive prior to a combat launch, and their low radar cross section has required NORAD to adapt new tactics, techniques, and procedures to counter them.

We must continue to invest and innovate to stay ahead of this emerging threat, and we have made significant advancements as part of those ongoing efforts. To that end, I would like to thank the defense committees for fully funding the Department's request for funding the procurement of Active Electronically Scanned Array radars to significantly improve the ability of our fighter aircraft to detect and engage advanced cruise missiles. Active Electronically Scanned Array radars and the network of ground-based sensors integrated under the Homeland Defense Design will provide important improvements to our ability to counter an expanding set of airborne threats.

UNMANNED AERIAL SYSTEMS

The proliferation of commercial unmanned aerial systems in United States and Canadian airspace poses a significant challenging for the Department of Defense, the Federal Aviation Administration, Transport Canada, and the law enforcement community. The rapid development of unmanned aerial systems technology is fueling the exponential growth of the civil unmanned aerial systems industry and making unmanned technology readily available for commercial and recreational users. There are a great many legitimate commercial and recreational opportunities for unmanned aerial systems operating in the domestic airspace system; however, the potential exists for unmanned aircraft to be used by persons or groups with nefarious intent, especially given that their relative slow speed, low altitude, and small size make them capable of evading detection and tracking.

In the near term, USNORTHCOM and NORAD will continue to support the whole-of-community effort to develop a comprehensive roadmap that aligns operational requirements and technology solutions with the necessary policy and authorities. I am grateful to the Committee for your support in providing the expanded authorities to address unmanned systems that present

threats to safety or security on and over Department of Defense installations. Those authorities enhance our ability to defend critical assets and facilities in the United States and provide needed legal authority to take action as necessary to defend personnel and vital assets. USNORTHCOM and NORAD support the Department of Homeland Security, and our private sector partners in exploring several emerging solutions, which include commercial off-the-shelf technologies specifically designed to provide point and area defense against unmanned aerial systems. These technologies provide potential tactical options for addressing unauthorized or threatening unmanned aerial systems operating in the vicinity of Department of Defense installations and vessels.

THE ARCTIC

The Commander of USNORTHCOM is designated as the Department of Defense Advocate for Arctic Capabilities, responsible for collaborating with fellow Arctic stakeholders to identify the requirements and associated gaps for operating in a vast and enormously challenging region. The growing concerns regarding the increased number of nations competing for Arctic resources are well justified as diminishing sea ice provides opportunities for significantly expanded access to a region that had previously been inaccessible to all but a handful of northern nations. USNORTHCOM closely collaborates with U.S. Pacific Command, U.S. European Command, and other stakeholders to identify emerging and long-range challenges in this increasingly valuable region while conducting regular exercises and strategic planning sessions to better anticipate emerging and future mission requirements for the Arctic.

Over the past year, USNORTHCOM has sponsored a number of efforts to better understand the requirements for operating in the Arctic, to include exercises such as ARCTIC EDGE, which focuses on training, equipping, and developing tactics, techniques and procedures

for joint and combined exercises in an arctic environment. These exercises are also linked into strategic-level exercises and planning efforts by USNORTHCOM and our fellow combatant commands to validate requirements, identify capability gaps and seams, and rehearse mission tasks with a variety of mission partners and subordinate elements. The lessons learned from these endeavors then allow me, in my role as the Department of Defense Arctic Capabilities Advocate, to more effectively collaborate with other combatant commanders and the military Services to assess current and future needs.

For example, based on requirements gleaned from our exercises and ongoing assessments, USNORTHCOM previously advocated for enhanced communications capabilities such as upgrades to the Integrated Broadcast Service system and improved satellite communications provided by the Mobile User Objective System. These upgrades, which have been funded, will allow for longer duration missions and improved communications across the Arctic, which directly benefits our ability to detect and understand Russian behavior in the region. With similar objectives in mind, USNORTHCOM and NORAD also successfully advocated and received funding for the sustainment of the Alaska Radar System, as well as for joint exercises and training in Alaska that will sharpen our ability to respond to emergencies and conduct sustained operations in the region.

Assessing and planning for future needs in the Arctic continues to be a collaborative effort within the Department of Defense, across the United States government, and throughout the international community. In light of need for collaboration, the Arctic Capabilities Advocacy Working Group provides a forum for Department of Defense, interagency, and trusted international partners to identify requirements, capabilities, and shortfalls across the spectrum of Department of Defense Arctic operations. Finite budgets and demands from competing global

priorities compel us to identify prudent opportunities to invest in material and non-material capabilities that enable a wide range of contingency and emerging missions.

At present, we are primarily focused on improving fundamental operational capabilities that support domain awareness, communications, infrastructure, and sustainable presence in the Arctic. By focusing on scalable infrastructure, we can enable forces to operate freely with Arctic capable platforms and provide flexible response options.

DEFENSE SUPPORT OF CIVIL AUTHORITIES

NATURAL DISASTERS

USNORTHCOM's mission to support civil authorities with military-unique capabilities during the response phase of natural disasters was put to the test in 2017 as the command supported the Federal Emergency Management Agency and state, federal, and territorial officials in the aftermath of hurricanes Harvey, Irma, and Maria. The response force required to provide search and rescue, route clearance, medical evacuation and treatment, airlift, commodities distribution, and a host of other missions.

I want to acknowledge the strong cooperation and rapid responses provided by each of the military Services in response to USNORTHCOM requests for forces in support of FEMA mission assignments, and I am grateful to the thousands of Soldiers, Sailors, Airmen, and Marines who deployed in support of our fellow citizens during a time of great need. We are currently working with the Services, our interagency partners, and Department of Defense leaders to capture lessons learned from every phase of the response, and we will incorporate those lessons into future interagency training events and exercises. That training, along with the

relationships USNORTHCOM maintains with our active duty, reserve component, and civilian partners, is essential to our ability to provide rapid and effective support to lead federal agencies.

TRANSNATIONAL CRIMINAL NETWORKS

The flow of illegal narcotics into the United States has led to a public health crisis that has killed thousands of Americans and inflicted lasting damage on our families and communities. The Transnational Criminal Organizations responsible for the influx of illegal narcotics employ sophisticated networks to transport and distribute their illicit products across international and jurisdictional boundaries, leaving violence and instability in their wake. As part of a collaborative interagency effort to stem the tide of illegal narcotics and other illicit goods into the United States, USNORTHCOM operates in support of civilian law enforcement and our international partners by leveraging our unique capabilities to plan, support, and conduct Counter Threat Network operations per the 2017 Unified Command Plan.

The cartels' disregard for borders and ability to rapidly adapt to changing conditions requires an equally flexible response and the ability to operate seamlessly over Unified Command Plan boundaries. In light of that reality, USNORTHCOM works hand in glove with U.S. Southern Command and U.S. Special Operations Command to illuminate and disrupt the threat networks and provide support to all lead federal agencies.

That fight has come at a high price for our partners, and the toll continues to mount as the Mexican government has implemented an assertive strategic effort to interdict the flow of drugs and precursor chemicals at its southern border. The united effort to counter such well-financed and brutal adversaries will continue to rely heavily on prudent investment in building partner capacity.

THEATER SECURITY COOPERATION

In the complex and dynamic strategic environment facing our nation today, the successful defense of the United States is reliant on building and maintaining close ties with our North American neighbors. USNORTHCOM is proud to participate in Theater Security Cooperation with Mexico, Canada, and The Bahamas to build partner capacity and foster mutually beneficial security interests. Theater Security Cooperation is a critical enabling activity that provides training, collaboration, and resources that strengthens our collective defense and fosters closer military-to-military relationships between our components and their international counterparts.

MEXICO

Mexico is an essential partner in the defense and security of North America. The relationships between USNORTHCOM and our partners in the Mexican Secretariats of National Defense (SEDENA) and Navy (SEMAR) continue to flourish. The military-to-military relationship starts at the tactical level and extends through the close ties between USNORTHCOM senior leadership and SEMAR and SEDENA. Further, Secretary of Defense Mattis has developed a close personal and working relationship with both Mexican Secretaries. Our enduring partnership with Mexico has paid significant dividends for both our nations' security, and continues to expand and evolve with every combined engagement.

The Mexican military has long been engaged in the fight against the drug cartels that have inflicted great harm on both our nations, and USNORTHCOM is proud to support our Mexican partners by providing equipment and training to reinforce those vital efforts in response to requests for assistance by the Mexican Government. USNORTHCOM’s component commands are very active in supporting the desires of our partners to conduct security cooperation. As an example, in 2017, United States Marines from USNORTHCOM’s Marine

Forces North provided small-unit training to over 1500 Mexican Marines to help prepare those troops for the fight against the cartels.

USNORTHCOM continues to evolve alongside our North American partners as we become increasingly interconnected in the defense and security of our continent. Over the past year, I joined Secretary of Defense Mattis in Mexico to meet with senior Mexican military leaders to discuss our mutual military interest. Additionally, USNORTHCOM was pleased to host our Mexican partners for a series of staff-level defense bilateral workshops, joint staff talks, and operational staff discussions.

Even as the Mexican armed forces continue the counter-narcotics fight in support of our combined law enforcement efforts, their leaders are undertaking concerted efforts to enable broader regional security and provide defense leadership throughout Latin America. These efforts by our Mexican partners continue to reinforce their own national security, while providing significant contributions to the security of North America as a whole. USNORTHCOM looks forward to a lasting partnership with our neighbors.

CANADA

The United States and Canada share the longest undefended international border in the world, and our collaborative relationship is one of the closest and most extensive in history. This relationship reflects a unique friendship, underpinned by common values, that has evolved over the course of the last century.

In May 2018, NORAD celebrates its 60th birthday defending the United States and Canada in the air domain. We continue to evolve this venerable relationship to keep pace with evolving threats to ensure our bi-national defense can deter, and if necessary, defeat potential future attacks. NORAD prioritizes interoperability and command and control through regular

operations, combined training and exercises, combined planning, information and intelligence sharing, and personnel exchanges to ensure we are capable of conducting operations together, across the spectrum of conflict.

A critical component of our operational defense framework is the tri-command relationship between USNORTHCOM, NORAD, and the Canadian Joint Operations Command. Together, we are working to further integrate our operational framework into an adaptive continental defense arrangement that can function across multiple domains to defend the United States and Canada that preserves each nation's ability to conduct unilateral national missions such as disaster response.

THE BAHAMAS

The United States and The Bahamas, our closest maritime neighbor, share a strong bilateral relationship founded on a shared culture and common interests in security and trade. The Bahamian government is committed to close cooperation with the United States for law enforcement and maritime security and countering the networks used by criminal traffickers. The Bahamian government has made a significant investment in their military, and continues to expand their presence across the island chain to improve their maritime domain awareness and enhance their ability to counter illicit flows of narcotics and illegal immigration.

This year, The Bahamas will host TRADEWINDS 2018, a joint USNORTHCOM and U.S. Southern Command exercise involving multiple partner nations in the Caribbean Basin, and participants from Canada, France, the Netherlands and the United Kingdom focusing on countering transnational threat networks and humanitarian assistance and disaster response.

CONCLUSION

Above all, I am proud to serve alongside the remarkable men and women of USNORTHCOM and NORAD as they stand guard over our homelands against a rapidly evolving and increasingly complex set of threats. Their proud histories and future successes are deeply rooted in a shared, unshakable commitment to protecting our citizens and defending our common values. Together with our allies and partners, I am confident we will continue to adapt, innovate, and fulfill the sacred responsibility of defending our great nations.

"We have the watch"

Senator INHOFE. Thank you, General Robinson.
Admiral Tidd?

STATEMENT OF ADMIRAL KURT W. TIDD, USN, COMMANDER, UNITED STATES SOUTHERN COMMAND

Admiral TIDD. Senator Inhofe, Ranking Member Reed, and members of this committee, thank you for this opportunity to address you today. I join my colleague and partner, General Robinson, in extending our very best, warmest wishes to Senator McCain and to his family, and he is in our thoughts and prayers today.

Also in our thoughts and prayers are the victims and family members of yesterday's tragedy in Parkland, Florida. As you probably know, some of our Southern Command teammates have children who were present during the incident but were, fortunately, unharmed. We greatly appreciate the first responders, the faculty members, and other students whose actions no doubt saved lives.

Now, as I said, I am here with my good friend and my teammate, General Lori Robinson. We are products of the intentions of the Goldwater-Nichols legislation that led to an emphasis on jointness. This is not the first time that we have appeared together. This is not the first time that we have worked together. In fact, our partnership goes back over a decade. I would just like to say that it is absolutely very much appropriate and fitting that we have the opportunity to talk to you today about the western hemisphere security challenges.

I look forward to discussing how our two commands work together and to ensure that there is an absolutely seamless defense of our Homeland.

Over the past year, SOUTHCOM has focused on building a regional security network of principled, inclusive partnerships. Partners throughout Latin America and the Caribbean are working with each other and with us on a range of shared challenges.

These challenges manifest themselves in our hemisphere in several concerning ways. Criminal and extremist networks continue to threaten regional stability and our national security. We know of specific cases of individuals who were involved in plots to attack our Homeland or our partners. Fortunately, they were stopped but this remains a significant, persistent concern.

Competitors like China and Russia seek to exploit the perception that we are disengaging from the Americas, and as they succeed in their efforts comes an increased ability for them to interfere with our security relationships and to hold our interests at risk. These challenges are less overt and sometimes more insidious than in other theaters. They are manageable with modest investment, sufficient attention, and early engagement. For SOUTHCOM, that involves tools that strengthen relationships and build capacity.

Now, we are not talking about brigade combat teams or aircraft carriers in our theater. We are talking about small teams of general purpose and special operations forces to maintain critical training engagements. We are talking about medium endurance ships with embarked helicopters and particularly those that are interoperable with our partners and with enough awareness to buy down risk against problems early and stop threats at their source before they become more costly.

We appreciate the attention of Congress to this region and thank this committee for its support to the mission and the men and women of SOUTHCOM and to our families.

I look forward to answering your questions.
[The prepared statement of Admiral Tidd follows:]

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POSTURE STATEMENT OF

ADMIRAL KURT W. TIDD

COMMANDER, UNITED STATES SOUTHERN COMMAND

BEFORE THE 115TH CONGRESS

SENATE ARMED SERVICES COMMITTEE

15 FEBRUARY 2018



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INTRODUCTION

Chairman McCain, Ranking Member Reed, Members of the Committee: I appreciate the opportunity to discuss U.S. Southern Command (USSOUTHCOM) and our efforts in Central America, South America, and the Caribbean. Every day, our men and women work to secure our southern approaches and build a regional security network of principled, inclusive partnerships. As an economy of force Combatant Command, we depend upon this network to help maintain our own security and defend our homeland in depth. It is the most important layer of our forward defense.

Yet the combined impacts of defense spending caps, nine years of continuing resolutions, and insufficient spending in the diplomacy and development arenas make it increasingly difficult to sustain this regional network. Because our global security responsibilities outpace the resources available to meet them, we have had to make a series of tough choices, resulting in compounding second and third order effects. The net result is the perception among our friends—and the palpable anticipation among our competitors—that we no longer stand by our commitments, that we are relinquishing our strategic position, and that we don't take the challenges in this region seriously. On the surface, these regional challenges may not seem directly related to the larger global challenges that dominate headlines and policymaking. They don't always fit neatly in our strategic frameworks, as they blur the line between crime and war, competition and conflict, and simmering problems and crises. Left unchecked, however, their impacts compound over time, emboldening competitors in other theaters, draining capabilities needed in other high priority missions, and taxing our economic strength.

Mr. Chairman, we must address evolving security challenges to help hold the line in this hemisphere, and ensure a crisis within it doesn't distract from our ability to address even higher

priority global challenges elsewhere. We should not make assumptions that the future will be as generous to our interests in this region as the past, which means we need to decide how much security is acceptable in a part of the world so closely linked to the U.S. homeland. Unless we decide, we may open ourselves to exploitation by our adversaries, erode our competitive edge and, in the case of this theater, as well as expose our southern flank to a well understood range of vulnerabilities. We appreciate the support of the Congress in this matter, and I look forward to providing a detailed overview of the challenges and opportunities in this region, and our missions within it.

CHALLENGES AND OPPORTUNITIES

Security environment. Latin America and the Caribbean is a region of contrasts, of both positive and concerning trends. It is not one homogenous place, but many disparate communities, home to modern, diverse, democratic societies, with a growing middle class and professional, capable militaries. Yet it faces governance challenges—including political corruption, unmet development goals, and shocking levels of violent crime—that create a permissive environment for illicit and other concerning activity.

Eight of the ten countries with the world's highest homicide rates are in the region, as are 43 of the world's 50 most violent cities.

The global threat of violent extremism has gained a small foothold within Latin America's growing Muslim populations. Groups such as the Islamic State and others will likely continue recruiting fighters or inspiring others to carry out attacks in their home countries. Insecurity and economic hardship continue to drive migration; while overall trends are returning to historical norms, migration from the Northern Triangle across the US-Mexico border is once again on the rise. Natural disasters regularly impact vulnerable countries, exacerbating struggling economies, and Venezuela remains at risk for internal instability, which could have

significant regional ramifications. Within this context, the region contains a mix of challenges from both non-state and state actors.

Threat networks—including drug traffickers, arms dealers, human smugglers, terrorist supporters and sympathizers, and money launderers—use common pathways and conduct operations that span the region and reach deep into our homeland. Criminal networks move drugs and engage in a wide array of illegal activity, including weapons trafficking, chemical importation, poppy and coca cultivation, fentanyl smuggling, and illegal mining. Transnational gangs like MS-13 and the 18th Street target and kill police officers in Central America, and routinely communicate with counterparts in places like Massachusetts, Virginia, New York, New Jersey, and Maryland to direct operations on U.S. soil. Human smugglers enable the transit of thousands of illegal immigrants and Special Interest Aliens (SIAs) to our borders.[1] Lebanese Hezbollah supporters exploit free trade zones, working with criminal groups to raise funds. Collectively, these groups create pathways and vulnerabilities that can be exploited by terrorists or proliferators, and corrode confidence in the governance of partner nations we rely on to advance regional and global security interests.

This challenge is constantly evolving. As this Committee knows, thirty years ago we focused on large cartels with designated leaders and relatively straightforward operations. Today, those cartels have diversified, decentralized, and franchised their operations. They are borderless, operating with the fluidity of a multinational corporation, but with impunity. They traffic in more illicit products, kill more Americans with illicit drugs, and earn ever-greater illicit profits. Looking beyond the immediate, however, the larger challenge posed by threat networks is far more insidious: their potential to undermine democratic progress in all its forms. Mr.

[1] A Special Interest Aliens (SIA) is a foreign national originating from a country with potential or established terrorist links.

Chairman, what these groups are really engaged in is an assault on the rule of law, and everything it stands for.

This assault comes in many forms. We see it when illicit elements attack police, judges, and innocent by-standers, violating the most fundamental human right of all: the right to citizen security. We see it in the corruption of institutions and government officials. And we see it in the slowly expanding spaces of lawlessness, alternative order, and criminal control, which creates a breeding ground for other transnational threats. The cumulative effects of these groups eats away at core democratic values. Threat networks play a major role in fostering the corruption and insecurity that erodes citizens' faith in democracy, especially in countries with the highest levels of criminal violence. When we think about attacks on democracy, I would offer to this Committee that we must consider attacks that come from *all* quarters—not just attacks from traditional, nation-states.

The stark reality, however, is that we are likewise faced with traditional nation-state challenges. China, Russia, and Iran are courting some of our most strategically important Latin American and Caribbean partners and supporting authoritarian, anti-American regimes. With every inroad they make, they enlarge competitive space to interfere with our security relationships, cancel out our interoperability with the region, undermine our efforts to reinforce international norms, and hold our interests at risk.

China's commercial and diplomatic advances move it closer to its larger strategic goal of reshaping global economic and governance architectures. China has pledged $500 billion in trade with Latin American countries and $250 billion in Chinese direct investment over the next ten years. Increased economic cooperation—such as the extension of the 'One Belt, One Road' initiative to Latin America, one of the nodes to support China's vision of a competing global

economic initiative—and the continued provision of financing and loans that appear to have 'no strings attached' provide ample opportunity for China to expand its influence over key regional partners and promote unfair business and labor practices. Increased reach to key global access points like Panama create commercial and security vulnerabilities for the United States, as do Chinese telecommunications and space ventures with dual-use potential, which could facilitate intelligence collection, compromise communication networks, and ultimately constrain our ability to work with our partners.



(DOD Photo) Service members from partner nation air forces work together during PANAMAX Aug. 14, 2017. The week-long exercise focused on security of the Panama Canal.

Russia's increased role in our hemisphere is particularly concerning, given its intelligence and cyber capabilities, intent to upend international stability and order, and discredit democratic institutions. Russia is a strategic competitor actively seeking to degrade U.S. partnerships and undermine U.S. interests in the region. Moscow attempts to falsely shape Latin America's information environment through its two dedicated Spanish-language news and multi-media services, and through its influence campaigns to sway public sentiment. Expanded port and logistics access in Cuba, Nicaragua, and Venezuela provide Russia with persistent, pernicious presence, including more frequent maritime intelligence collection visible force projection in the Western Hemisphere. The sanctuary of robust relationships with these three countries provides Russia with a regional platform to target U.S. and partner nation facilities and assets, exert negative influence over undemocratic governments, and employ strategic options in

the event of a global contingency. Left unchecked, Russian access and placement could eventually transition from a regional spoiler to a critical threat to the U.S. homeland.

Additionally, **North Korea** may use its small presence in Latin America to do us harm while also looking to develop expanded economic and diplomatic partnerships. We remain concerned that Pyongyang could use its limited footprint in the region to collect or plot against us. Given the permissive environment in the region, North Korean efforts to generate revenue, and its history of working with supporters like Cuba to circumvent sanctions, North Korea is likely to engage in some form of illicit activity in Latin America.

Post the Joint Comprehensive Plan of Action (JCPOA)**, Iran** seeks to expand its diplomatic relationships and trade and investment opportunities. Having a footprint in the region also allows Iran to collect intelligence and conduct contingency planning for possible retaliatory attacks against U.S. or Western interests. Lebanese Hezbollah maintains an established logistical, facilitating, fundraising and operational presence in this region that can be quickly leveraged with little or no warning.

Challenges to U.S. interests are not limited to extra-hemispheric actors. From a national security standpoint, **Cuba** has demonstrated clear intent to target U.S. interests through collection, surveillance, and counterintelligence activities in countries throughout the region. It has also demonstrably failed in its international obligation to protect diplomatic personnel. The planned political transition this spring is unlikely to change Cuba's approach, diminish the military's position of influence, or alter continued cooperation with Russia, China, and even North Korea on a range of security, political, and economic issues. Cuba's negative influence in Venezuela—notably through its intelligence service and Armed Forces, which play key advisory roles shaping Venezuelan domestic policy—is evident in the Maduro regime's increasingly

authoritarian tactics and human rights abuses. This relationship is symbiotic, as Cuba receives oil and financial support in exchange for keeping the Maduro regime afloat.

The future of that relationship, however, is unclear, as the political, economic, and humanitarian crisis in **Venezuela** worsens by the day. Its citizens (especially the most vulnerable) are suffering. The health care system has nearly collapsed. Child malnutrition rates are past the crisis threshold and infant mortality rates have risen sharply. Some reports suggest that 93% of Venezuelans claim they cannot afford the food they need. The government is on the brink of total default as a result of the Maduro regime's mismanagement of the economy. Given these conditions, Venezuela's neighbors face a growing influx of migrants, straining local economies, health, and education sectors around the region. Over 500,000 Venezuelans have fled to Colombia, 40,000 to Brazil, 93,000 to Ecuador, and tens of thousands more to other countries in the region. Continued out migration of Venezuelans fleeing the dire economic and humanitarian situation at home is straining many neighboring economies to the breaking point, increasing the potential for regional tensions and border conflicts as countries attempt to protect scarce resources.

Venezuela has long provided a permissive environment for narco-terrorist groups and Lebanese Hezbollah supporters, and is a transit country for the smuggling of illicit drugs and SIAs. The continued assault on democratic institutions provides increased space for illicit actors to operate with impunity, and for Russia, China, and Cuba to expand their influence over the corrupt Maduro regime. The next few months will likely prove critical, with a presidential election, continued economic deterioration, and widespread shortages of medicine, food, electricity, and consumer goods.

While these challenges are significant, they are not insurmountable. Across the regional security network, we continue to build capability, capacity, and interoperability, expand information sharing, and deepen linkages with the many committed and capable partners we have in the region. Below are but a few examples of the significant, positive trends and increasing contributions and leadership of our partners to help us address shared challenges in our hemisphere.

El Salvador, Guatemala, and Honduras continue to make progress implementing their reform initiative, the Plan of the Alliance for Prosperity despite mounting challenges from gangs like MS-13. Their security services have played key roles in contributing to internal security gains. All three have plans in place to strengthen their law enforcement capabilities so they can eventually phase their militaries out of domestic security missions. **Belize** is demonstrating willingness to cooperate, sharing information with its neighbors and with us on drug smuggling and other illicit activity. Further south, **Panama**—a critical partner in both counter-terrorism (CT) and countering transnational organized crime (CTOC)—is taking important steps to address the increasing flow of migrants and SIAs from the Middle East, Central Asia, and Africa.

A NATO partner, anchor for regional stability, and emerging contributor to global security challenges, **Colombia** remains a staunch friend whose leadership is critical to addressing threat networks, SIA smuggling, and the mutation of FARC dissidents into illegally armed groups. **Peru** is expanding its role in regional maritime security and continues to provide significant contributions to international peacekeeping efforts, while also contributing to the fight against coca cultivation. This year **Chile** will assume a major leadership role in the world's largest multinational maritime exercise, the Rim of the Pacific (RIMPAC), and is deepening maritime security cooperation throughout the Asia-Pacific region, while **Brazil** is working a

South American security initiative to coordinate regional responses to criminal and extremist networks. Caribbean partners like **Trinidad and Tobago** and multinational organizations like the Caribbean Community (CARICOM), the Regional Security System (RSS), and the Caribbean Disaster and Emergency Management Agency (CDEMA) are improving sub-regional coordination to shut down drug and weapon smuggling routes, prevent the spread of extremist networks, and cooperate on disaster response.

In the year ahead, we see tremendous opportunity to deepen collaboration with these key partners and multilateral organizations, as well as reviving the mutually beneficial security partnerships with **Argentina and Ecuador**. Our regional partnerships are the cornerstone of our efforts to secure our southern approaches and the heart of everything we do in the region.

SECURING OUR SOUTHERN APPROACHES

Our mission and approach. USSOUTHCOM's mission is to secure the southern approaches, protecting U.S. interests in Latin America and the Caribbean while reducing the threats extending from or through this region into the United States. We recognize that the region's primary challenges—criminal and extremist threat networks; vulnerabilities to natural and manmade disasters; and global competitors—are highly dependent on an integrated approach and leveraging authorities and capabilities across the joint, interagency, international, and non-governmental communities. That's why our approach has *always* been less about what we need, and more about how we better employ what we have. We seek to mobilize and organize the unique strengths of each of our partners and Allies, to expand information sharing and collaboration, and to align security, development, and capacity building activities that allow us to translate short-term successes into long-term gains, sustained by an adaptive and inclusive regional security network.

Countering threat networks—our main effort. We have internally reorganized our headquarters and refined command and control relationships across the USSOUTHCOM enterprise to improve the effectiveness and efficiency of our counter threat network activities, and strengthen collaboration with interagency, regional, and non-governmental efforts. Working by, with, and through our network of partners, we confront the challenge of criminal and extremist networks at their source.

Enabling our network of partner nations. Building partner capacity (BPC) remains the primary way we improve interoperability and enable partner nations to take the lead in countering transregional threats. Our investments in places like the Northern Tier, Colombia, Panama, Trinidad and the Dominican Republic continue to pay significant dividends, as each of these nations have significantly improved their internal security, and increasingly execute successful maritime interdiction operations, many of which are in direct support of JIATF South. Naval Special Operations Forces in Guatemala, El Salvador, and Panama are now among the most competent and responsive counternarcotic (CN) units in Central America, integrating with air assets, effectively responding to JIATF South "cues," and executing numerous joint and individual interdiction operations. In Trinidad and Tobago, we initiated a 2282 Train and Equip program—which has helped better posture their CT units to illuminate and degrade violent extremist networks and their enablers throughout the region—and are developing legal capacity through a robust Judge Advocate corps to help reinforce rule of law, a critical element in the counter threat network fight. We also supported our partners in the Dominican Republic to improve maritime interdiction in the Caribbean through the establishment of a Joint Task Force that combined SOF-trained CN units with Dominican naval aircraft.

Beyond enabling the immediate efforts of our partners, we also build operational and institutional capacities that in turn translate into more accountable, effective, and sustainable security organizations capable of mutually supporting each other while addressing our shared security challenges in the region. In the year ahead, we are developing engagement strategies that focus on episodic training engagements to maximize the effectiveness of BPC activities, even with minimal forces.

In South America, we are partnering with Brazil, Chile, Peru, and Colombia in support of multinational operations that confront the expansion of threat networks in South America. Colombia, in particular, remains our indispensable partner in the counter network fight. Since the signing of the peace accord, security levels have dramatically improved and conflict-related killings have plummeted. At the same time, the peace process has brought with it real challenges in extending state presence and economic opportunity, dismantling illicit networks, and reversing coca growth, all of which threaten to undermine a meaningful transition out of conflict. Our partnership with Colombia remains critical at this difficult moment. Their progress is historic, but our work there is far from done. Just as we never considered walking away from our NATO allies upon the conclusion of the Cold War, it should be inconceivable that we permit any diminution in our ties with Colombia today. The Department's Section 1021 authority has been particularly valuable to our efforts in Colombia, and we look forward to working with this Committee to ensure the authority remains relevant given the evolving security environment there.

Mr. Chairman, in our view, a Colombia at peace can do even more, both regionally and globally. Supporting Colombia's efforts to address its problems and

Since 2013, USCAP has trained 5,598 Leahy-vetted security and defense personnel. A high-demand, low-cost program, requests for USCAP events have increased eiaht-fold since its creation.

deliver on the promises of the peace accord remains in our interests, as does facilitating Colombia's continued regional leadership and role as a net security exporter. Our Colombian partners continue to willingly and usefully share hard-won security lessons with Mexico, Central America, and the Caribbean through the U.S. Colombia Action Plan for Regional Security (USCAP). In the year ahead, we will remain engaged on Colombia's new riverine efforts, ongoing defense transformation, interest in pursuing trilateral cooperation with Mexico, and implementation of holistic plans to extend government presence, confront illegality, and encourage sustainable development. To further deepen linkages within the region security network, we are also offering key leadership and staff billets to both Colombia and Chile during the Marine Corps' Special Purpose Marine Air Ground Task Force (SPMAGTF) 2018 deployment, with the goal of complementing their respective contributions in Central America through USCAP and security cooperation training teams.

Deepening integration with the interagency network. At our headquarters, we continue to strengthen our successful partnership with the Department of Treasury, supporting the development of targeted financial measures and sanction designations against corrupt government officials in Venezuela, international narcotics traffickers, and money launderers. We are also expanding cooperation and integrating operations and intelligence professionals with the FBI, DEA, and DHS. Our premier exchange team at Joint Terrorism Task Force (JTTF) Miami provides intelligence fusion and collaborates on disrupting criminal and terrorist activities. Last year, this team helped the FBI disrupt an imminent threat to a U.S. Ambassador, supported an investigation into a major SIA smuggler, and provided analytic support to over two dozen law enforcement investigations. Beginning in April, we will again provide planning and analytic support to DHS' Operation CITADEL, a multinational, multiagency effort targeting

illicit smuggling networks. We are also working closely with DHS to align DoD planning efforts with their *Southern Border and Approaches Campaign Plan*, and deepening coordination with DEA and other partners on the expansion of fentanyl smuggling networks. Earlier this month we hosted a high-level Opioid Summit, which brought together interagency and non-governmental stakeholders to further a holistic approach to counter this threat to American lives.

We are also expanding linkages with interagency partners across Latin America and the Caribbean. Through the Central American Community of Interest (COI), JTF Bravo—our task force located at Soto Cano Air base in Honduras charged with promoting security cooperation and disaster response in Central America—facilitates information sharing on criminal networks and violent gangs involved in drug trafficking and other illicit activity in the region. JTF-Bravo's efforts also complements efforts by the State Department and the U.S. Agency for International Development (USAID) to improve security and governance, prevent crime and violence, promote prosperity and extend state presence through its humanitarian and medical engagements. Soto Cano now hosts the Forensic Exploitation and Analysis Center (FEAC), the first of its kind in Central America. This center provides document and biometric exploitation capabilities that directly support U.S. and partner nation law enforcement efforts to dismantle transnational criminal organizations.

The small team from JIATF South's Cyber-Container Initiative (CCI) has developed an innovative intelligence analysis methodology known as "technical network analysis." By profiling online cyber activity and detecting signs of nefarious activities, this group is able to deliver significant operational support to DHS, FBI, and other DoD and law enforcement operations aimed at targeting and disrupting narcotics trafficking, weapons smuggling, counter-proliferation, and other illicit activities undertaken by criminal and state-sponsored networks.

In the air and maritime domains, our detection and monitoring (D&M) operations and support to interdiction enable U.S. and partner nation law enforcement to successfully prosecute and dismantle criminal networks. JIATF South set a record for interdictions in FY 17, supporting the disruption of 283 metric tons of cocaine and the detention of nearly 900 suspected

members of drug trafficking organizations. Given limited U.S. government (USG) assets, we rely heavily on contributions by Canada, Central America, Colombia, Mexico, the Netherlands, the United Kingdom, and France. Without the support of this cooperative maritime network, an additional 77 metric tons of cocaine would have reached U.S. communities last year.



Data compiled from a variety of sources:
* The Office of National Drug Control Policy (ONDCP); Consolidated Counterdrug Data Base (CCDB)
** DOJ [Bureau of Prisons and law enforcement agencies (LEAs)]; CCDB
*** The UN Office of Drugs and Crime (UNODC); World Bank; CCDB
**** JIATFS; LEAs

Persistent asset shortfalls continue to present challenges to the D&M mission, however. On any given day in the Eastern Pacific in FY 17, JIATF South had, on average, 2.9 force packages available to respond to illicit trafficking events, and was typically only able to seize or interdict only 1 in 31 of those events. The sheer volume of illicit trafficking events far outmatches the force packages available to deal with them.[2]

Counter threat network operations, activities, and investments. We see great opportunity to build on the multinational cooperation that characterizes these international interdiction efforts, especially the successful inter-institutional coordination of last year's Operation KRAKEN, in which the United States, Colombia, Panama, and Costa Rica targeted illicit maritime pathways in the Central American littorals. This year, we will align KRAKEN's

[2] A force package consists of a medium to long range ship (such as a non-ballistic missile capable US Navy Destroyer or Littoral Combat Ship, or a US Coast Guard Cutter) hosting a Coast Guard Law Enforcement Detachment, with an interceptor boat, and one or more day/night capable helicopters with aerial use of force capability. A force package also includes a maritime patrol aircraft equipped with wide-area maritime search radar and infrared detection set (such as Joint Surveillance Target Attack Radar System (JSTARS) or a P-8). The more force packages available for employment, the more illicit events can be interrupted.

maritime interdiction operations with land-based counter threat network activities, including ongoing and planned operations like HORNET and TOGETHER FORWARD. Operation HORNET, which illuminates threat network activity along the Guatemala-Mexico border, has led to the identification of 36 illicit organizations to date, many with linkages across Central America and Mexico. Under the umbrella of Operation TOGETHER FORWARD, U.S. soldiers work with counterparts in Guatemala, Honduras, and El Salvador to improve cross-border collaboration against threat networks.

We are also expanding collaboration with U.S. Northern Command and U.S. Marine Corps Forces North to enable combined, multinational transregional operations by Mexican, Guatemalan, and Belizean security forces. By linking these operations with our capacity building programs; development efforts by USAID, the State Department, and non-governmental organizations (NGOs); and tailor-made training by teams from the Marine Corps' Special Purpose Marine Air Ground Task Force (SPMAGTF), we aim to employ a full range of threat network illumination, disruption, and prevention activities across Central America.

In the Caribbean, we are expanding ties with multilateral organizations like the RSS and CARICOM to address the growing challenge of extremist networks. Transregionally, small teams of U.S. Special Operations Forces (SOF) provide invaluable cross-functional support—including specialized capabilities, intelligence analysis, and targeted capacity and institution building—to deny anonymity to nefarious actors moving through the region and enable the disruption of criminal, ISIS, SIA, foreign fighter, and Lebanese Hezbollah support networks. Leveraging essential tools like Military Information Support Operations (MISO) and Civil Affairs capabilities, these teams empower regional partners by promoting good governance, amplifying moderate voices in the region's small Islamic communities, and facilitating regional

efforts to counter radicalization and recruitment by extremist organizations. We are very appreciative of the Theater Special Operations Command (TSOC), which provides a significant portion of our persistent presence, as well as unique capabilities, cultural awareness, and skillsets that are perfectly suited for the complex challenges in this region.

Addressing global challenges. When it comes to addressing Russia, China, and Iran, we focus on two interrelated areas. We monitor their activities in support of the *National Defense Strategy* and broader USG efforts. We also work to enable greater regional contributions to international security, safeguard U.S. interoperability with our regional partners, support the continued professionalization of our hemisphere's defense forces, and deepen cooperation in defense innovation.

Before I discuss that second area in greater detail, I'd like to share my views on "competition" with China and Russia in this region. Mr. Chairman, allow me to offer a candid observation. The larger strategic challenge posed by China in this region is not yet a military one. It is an economic one, and a new approach may be required to compete effectively against China's coordinated efforts in the Americas. Some of the most critical elements needed in this effort are not ones that USSOUTHCOM can bring to bear. In addition to the crucial role of whole-of-government efforts, I am referring to the strength and vibrancy of the U.S. private sector, our multinational corporations, and NGOs. As for Russia, we are educating and informing our partners on the potentially detrimental and destabilizing effects of Russian activity, especially Moscow's use of active measures and disinformation. As noted in our new *National Security Strategy*, Russia has found operating space in this hemisphere. With the support of the Congress, I believe we can close this space, and prevent Russia from advancing an agenda opposed to the United States, our allies, and our partners in the region.

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More often than not, the best way to compete is to be the best possible partner to our friends and Allies. That's why the majority of our efforts in the region are focused on strengthening the partnerships that are the backbone of the regional security network, and supporting the leadership and professionalization of partner nation security forces.

Facilitating regional contributions to international security. As part of the State Department's Global Peace Operations Initiative (GPOI) in our Latin American partners have demonstrated a willingness and ability to deploy effective peacekeeping capabilities—including critical enabling capabilities such as aviation, airfield support units, engineering companies, and medical units—which are persistent gaps in UN missions, especially in Africa. These partners deploy well-trained and equipped units with a reputation for strong performance in missions. Through capacity building programs such as GPOI, we help support the development and deployment of these critical mission assets, strengthening the effectiveness of the operations to which they deploy.

Similarly, with over 57 years of building interoperability with the navies of Central and South America, the UNITAS series of exercises has created a cadre of very capable maritime forces that can seamlessly incorporate themselves into not only U.S. led operations, but those of our NATO and Indo-Asia-Pacific partners as well. We are working to transition future iterations of UNITAS from a traditional scripted exercise to an actual humanitarian assistance and disaster response (HA/DR) capable force that can exercise at sea against real world, unscripted missions. This multinational capability not only encourages burden sharing, it accelerates our naval and interagency interoperability by compelling planning and execution with real world political and operational implications.

Building a network of accountable, professional security partners. We actively support the efforts of Argentina, Chile, Colombia, Guatemala, and Guyana to strengthen their institutions. DIB engagement helps increase the sustainability of our security cooperation programs, encourages our partners to take ownership of their security needs, and promotes universal values of transparent oversight of security forces and the rule of law. This program complements broader International Military Education and Training (IMET), which has facilitated the attendance of nearly 16,000 students from the region at military courses at the Western Hemisphere Institute for Security Cooperation (WHINSEC), the Inter American Air Forces Academy (IAAFA), the Inter American Defense College (IADC), and the William J. Perry Center at National Defense University (NDU), which provide invaluable opportunities to build relationships with future civilian and military leaders. Regional demand for IMET courses remains high, and China, in particular, is increasingly aggressive in courting students from the region to attend Chinese military schools, offering to cover all expenses and salaries in return for increased student enrollment.

We also support the continued professionalization of regional militaries through our Military Imperatives, which help build four core military competencies that strengthen the operational effectiveness, cohesion, and capabilities of our hemisphere's forces. These competencies— respect for human rights, the institutionalization of jointness, development of professional non-commissioned officer (NCO) corps, and integration of effective gender perspectives—are interconnected and interdependent characteristics of capable, modern defense forces.

In 2017, we co-hosted the 2nd annual Women in the Military Conference with Guatemala, bringing together regional force leaders to share perspectives on improving gender integration and talent management.

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2017 also marked the 20th anniversary of the Human Rights Initiative, celebrating two decades of partnership in Latin America and the Caribbean to enshrine respect for human rights into the training, doctrine, and moral code of our hemisphere's security forces. As the only Combatant Command with a dedicated Human Rights Office, we work closely with our partner nations to emphasize human rights as a military imperative that cannot be an afterthought in military missions. We will continue to preserve this vital office even in the face of mandated headquarters manpower reductions. Without the consistent engagement on human rights by the U.S.—whether by the State Department, USAID, DoD, or another agency—the significant progress we have seen simply would not have happened. That engagement *must and should* continue. While our partners acknowledge their responsibility to respect and protect human rights, many lack the resources to build strong programs.



(DOD Photo) U.S. Army National Guardsman with Barbados Defence Force members during a USSOUTHCOM-sponsored Tradewinds Exercise June 8, 2017.

We regularly promote jointness in annual multinational exercises. Last year we supported the Dominican Republic's creation of a professional NCO Corps, South America's first-ever Senior Enlisted Conference, and continued regional leadership on effective gender integration in military and security forces and peacekeeping operations. We continue to advance these imperatives within our organization as well, and we are learning from our partners as much as we are sharing our lessons learned.

Collaboration on Innovation. Collaboration on defense innovation offers a unique platform to engage with our network of partners. Innovation also provides an opportunity to mitigate capability gaps and support defense capabilities and concepts, including those that

ensure the U.S. military's continued advantage over potential adversaries. I am especially proud of our collaboration with the National Geospatial Intelligence Agency (NGA) to work with regional partners "in the open," combining commercially available imagery with online tools and publicly available data that we can easily share with our partners. We are currently working with Brazil, NASA, and others on a joint small-satellite project that stands to improve our operational effectiveness during disaster response, and conducting a Long Duration/Long Dwell ISR pilot program to investigate and deploy innovative, non-traditional ISR assets that have the potential to partially mitigate our D&M shortfalls in the Eastern Pacific.

Along with U.S. Cyber Command, we recently held an inaugural Cyber Conference, bringing together partner nations, academia, and the private sector to discuss issues related to cyber defense and innovation.

Preparing and responding to crises. In concert with our network of partners, we work tirelessly to improve our collective ability to respond to a range of crises. Through our capacity-building efforts and humanitarian assistance, we help build partner nation resiliency and reduce vulnerabilities at the community level. This not only reduces the need for a large-scale USG or DoD response, but also helps mitigate the kinds of poverty and extremism that can lead to larger contingencies. Nevertheless, we must be prepared to provide our unique capabilities if called upon. To improve our own preparedness, we are taking steps to increase our understanding of environmental change and predicative signals, which helps us better appreciate the effects of natural and man-made disasters on political and social structures. We are also honing our internal capacity by training and exercising against a range of real-world contingencies.

Prepare and prevent. Strong inter-Service relationships also help encourage greater regional response collaboration. The National Guard's State Partnership Program plays a role in the USG's efforts to enhance the region's ability to prepare and recover from natural disasters;

regular engagements by the Florida National Guard help improve first responder tactics and civil-military cooperation in the Caribbean. Last year, the U.S. Army served as the Executive Secretariat of the Conference of the American Armies, which grew to 22 members with the addition of Jamaica and Barbados. Thanks to this persistent engagement by the Army, our region is one step closer to creating a partner-led, combined Joint Task Force for future humanitarian assistance and disaster response (HA/DR) operations.

Through our humanitarian assistance program and the superb support provided by the US Army Corps of Engineers, we provide training to thousands of U.S. service members and support our State Department and USAID partners by enabling intergovernmental and non-governmental efforts to extend state presence; build infrastructure like schools, water wells, and fire stations; and deliver essential services like medical care and sanitation improvements. This type of resiliency building at the community level helps nations prepare for and recover quickly from natural disasters, while also reducing the influence of criminal networks and the main drivers of migration. Medical training (MEDCAPS) and annual medical engagements like NEW HORIZONS and CONTINUING PROMISE—which will soon deploy to Colombia, Panama, Honduras, and Guatemala—provide a vital platform to improve the interoperability of U.S. military personnel, partner nation forces, and NGOs. Public-private cooperation is a force-multiplier for all of these efforts, improving collaborative planning on humanitarian aid delivery, and extending the long-term impacts of our humanitarian assistance.

2017's NEW HORIZON exercise, held in the Dominican Republic, trained 402 US personnel who treated 11,686 patients. Utilizing nearly $500,000 in donated NGO goods and services, the team built three medical clinics and a vocational school for 120 students.

Multinational exercises also improve regional interoperability and the readiness of U.S. and coalition forces. Our annual PANAMAX exercise showcases the leadership of Colombia, Peru, Brazil, and Chile, who form the backbone of the multinational coalition to defend the Panama Canal. Held in Guatemala, this year's FUERZAS HUMANITARIAS exercise will bring together 20 different regional partners and multinational organizations like the United Nations to strengthen disaster relief mechanisms and improve synchronization between regional military forces, NGOs, and international organizations. We also regularly exercise our countering weapons of mass destruction (WMD) capabilities, and work with the Defense Threat Reduction Agency (DTRA), the Department of State, and a diverse group of nations, including Argentina, the Dominican Republic, Guatemala, Panama, and Peru, to develop and enable WMD crisis response capabilities for their military and civilian first responders. These partnerships demonstrate our commitment and enduring resolve to our partners in the face of the most devastating of potential disasters.

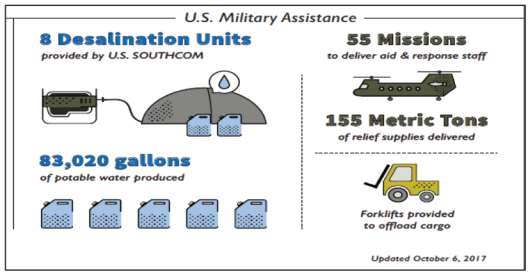
With Brazil, Chile, Colombia, and Peru playing major leadership roles, PANAMAX 2017 featured 249 participants representing 16 partner nations.

We are also growing our partnership with USAID from operations-based coordination to one that builds strategic, enduring partnerships and better aligns our regional and strategic priorities. Together, we are exploring methods to strengthen interagency accountability, develop joint metrics to measure outcomes, and utilizing and coordinating monitoring and reporting of our integrated efforts.

Rapid Response. Our ability to rapidly respond and provide unique capabilities also allows us to demonstrate our steadfast commitment to the region. Last year, joined by the UK, Chile, and others, we assisted Argentina in the search and recovery of the submarine ARA SAN JUAN, supporting our Argentine friends in a difficult time. This renewed relationship is

providing new opportunities to work with Argentina for the upcoming G-20 Summit and in the areas of countering WMD, combating terrorism, strengthening interagency response, and expanding information sharing.

Over the years, USSOUTHCOM, USAID, and our regional partners have made significant investments in improving the response capacities of multinational organizations. The return on this investment was evident in 2017, with CDEMA, CARICOM, and the RSS playing critical roles in the regional response effort to Hurricanes Irma and Maria, and multiple nations providing assistance to their Caribbean neighbors. For our part, by leveraging flexible, dual-purpose SPMAGTF forces already in the region, we were able to quickly evacuate thousands of American citizens, closely collaborate with French and Dutch Forces, and support simultaneous USAID/Office of Foreign Disaster Assistance (OFDA) disaster response operations in St. Martin and Dominica. We continue to work closely with USAID/OFDA to ensure that future humanitarian response efforts are



U.S. military support to Caribbean disaster response operations in 2017



(DOD Photo) The DOD distributes USAID relief supplies in Dominica Sept. 27, 2017.

timely, effective, and well-coordinated. It's not enough that our assistance make news; it has to make a difference.

OUR NO-FAIL MISSION: DETENTION OPERATIONS

The team at Joint Task Force Guantanamo (JTF-GTMO) continues to conduct detention operations with the utmost professionalism and strict adherence to international standards. Our troops take very seriously their responsibility to provide safe, humane, transparent, and legal care and custody of detainees. I could not be prouder of these young men and women. On top of this demanding mission, they support ongoing military commissions, *habeas corpus* proceedings, periodic review boards, and visits by congressional and foreign government delegations and organizations like the International Committee of the Red Cross. We appreciate the support provided in the FY18 NDAA for barracks construction, and we are currently reviewing other key facilities that require replacement or upgrades to enable the JTF to sustain operations as we move forward. As relayed previously, I have concerns related to providing specialized, long-term medical care for the aging detainee population. We are working with the Department to resolve this issue and will keep this Committee informed on the way-ahead.

OUR REQUIREMENTS

As I alluded to earlier, while Latin America and the Caribbean is inextricably tied to the security and prosperity of the United States, this region fares poorly in the competition for finite national resources. The ability of our interagency partners to strengthen governance, rule of law, and economic opportunities directly impacts our ability to achieve our military objectives. Persistent gaps in ISR, cyber, and analytic capacities hinder our ability to anticipate crises or adequately mitigate challenges. The paucity of our own assigned forces presents another complication; our presence and persistent engagement not only builds trust and confidence with

partners, but is especially important to counter threats or malign influence and contain crises in the Western Hemisphere. Mr. Chairman, to put it another way, you have to be on the field to compete, understand, confront, and degrade threats and adversaries. I look forward to working with the Congress in the year ahead to help ensure we maintain our competitive advantage in this vital part of the world.

I'd like to close by providing a brief overview of our mission requirements and highlight the importance of continued support to our interagency teammates.

Defense budget. The Congress has provided great support to the USSOUTHCOM mission over the years. Just last year, the Congress recognized the dire need for housing for our troops at JTF-GTMO, authorizing and fully funding a barracks project that would provide that housing. We saw this need in even more stark terms with the recent passing of multiple hurricanes through the Caribbean Basin, necessitating the evacuation of personnel from the island because of inadequate housing facilities. Though this project was supported by both the House and Senate, we are unable to proceed with this much-needed project that will directly support our deployed personnel due to the lack of an FY18 Budget—a very real impact of the delay in appropriations. This is in addition to the emotional toll this takes on all our people in the way of the disruption and uncertainty they deal with every time we face a potential—or in this case actual—government shutdown, which has become an increasingly regular occurrence. Our men and women deserve better.

Regional access. As the only U.S. forward-operating base in the Caribbean and the gateway to the Gulf of Mexico, Naval Station Guantánamo Bay plays a critical role for USSOUTHCOM, the State Department, Navy, Coast Guard, and DHS. The Naval Station is pivotal during mass migration events, counterdrug and search and rescue operations,

humanitarian assistance, and disaster-relief operations in the Caribbean. Similarly, Comalapa, El Salvador (home to one of our two Cooperative Security Locations that directly support the D&M mission) and Soto Cano Airbase (which houses JTF-Bravo, Special Operations Forces, and the SPMAGTF headquarters) provides the bulk of our forward presence in Central America. This access allows us to advance security cooperation efforts, initiate regional disaster response, and support law enforcement operations to disrupt threat networks. These two locations are vital to USSOUTHCOM, and we thank the Congress for its support to their continued operations.

Operational support. We also appreciate congressional support to our ISR program and funding for an additional Maritime Patrol Aircraft and Special Mission Ship in the FY18 NDAA. Both will significantly enhance JIATF South's current and upcoming operations like MARTILLO and KRAKEN, as well as partially mitigate persistent capability gaps in the D&M mission. As referenced earlier, in FY 2017 JIATF South had precise geo-location on 1167 targets carrying 815 metric tons of cocaine that we could not respond to due to lack of assets. Each additional force package deployment takes that number down by 31 metric tons. Resourcing for critical counter network capabilities—including information and intelligence sharing platforms, capacity-building efforts, and counter threat finance—are essential to our contributions to this fight. As we look to employ a more holistic approach in Central America, operations like TOGETHER FORWARD and HORNET would benefit from sustained engagement by Reserve and Guard forces and ISR platforms critical to illuminating threat network operations.

Sustained forward presence at sea are also essential to stemming the flow of drugs towards our borders. I'd like to go on record to express my strong support for the U.S. Coast Guard's efforts to recapitalize its fleet, especially its medium endurance cutters, which directly

support JIATF South-led interdiction operations. As I have stated repeatedly, without U.S. Coast Guard cutters, USSOUTHCOM would have virtually no afloat maritime forces. I'd also like to express my unqualified support for the Littoral Combat Ship (LCS), which we can leverage for multiple mission sets, including D&M, SOF support, partner nation capacity building, and potentially HA/DR response and medical engagements. LCS capabilities match our mission requirements perfectly, and we are working closely with the Navy to try and field them in our region. My view is that the sooner we can deploy these ships in theater, the greater the impact we can have on interdicting the flow of illicit drugs into our country.

A broad suite of tools like information operations, MISO, and Civil Affairs teams is applicable to multiple mission sets, including CTOC, CT, and countering external state actors. These tools are especially critical to shaping the increasingly contested information domain and addressing the more fundamental challenges of the region.

Like I reported last year, we continue to monitor the impact of wind farm construction on the U.S. Navy's Relocatable Over-the-Horizon Radar (ROTHR) sites. All three construction sites have proposed projects that are under review in the Department's compatibility evaluation process. Although we continue to research new alternatives to ROTHR, it remains our only persistent, long range aerial coverage for our southern approaches. I am particularly concerned about impending encroachment on the Texas site and our position remains that proposed wind farm developments should result in no degradation to ROTHR mission performance, and we will keep the Congress informed as this initiative moves forward.

Continued resourcing of the Marine Corps' SPMAGTF provides USSOUTHCOM with increased capacity at relatively little cost and returns a more ready, more capable force back to the Marine Corps. Without the pre-mobilized reserve force resident in the SPMAGTF, we will

be forced to rely on the Global Response Force for all major crisis response efforts, potentially draining resources from critical global missions. From a goodwill and engagement perspective, operational funding for the Navy's hospital ship COMFORT has been a proven game-changer for USSOUTHCOM. We ask for the COMFORT every other year, but the Navy has been unable to source its employment due to the ship's maintenance challenges. During disaster response, we continue to rely heavily on U.S. Transportation Command's (USTRANSCOM) Joint Enabling Capabilities Command (JECC), which provides unparalleled expertise in planning, public affairs, and communications.

Closer to home, we are working to address housing issues that impact quality of life and security for our young service members and their families, and reduce force protection and cost of living concerns resulting from having most of our military work force spread across three counties in one of our nation's largest metropolitan areas. We will keep the Congress apprised as this effort progresses.

Support to interagency partners and whole of government efforts. Parallel investments in our interagency partners operating in the Western Hemisphere are critical as we work to strengthen the capacities of regional military and security forces. From State Department's IMET program and public diplomacy efforts, to DEA's vetted units, DHS's Operation CITADEL, and our Embassies and USAID missions throughout the region, our interagency partners are key to advancing the security of the Western Hemisphere.

Given our limited resources, we rely heavily on the unique capabilities of key interagency partners to illuminate threat network operations and maintain ground truth on developments in the region. We directly benefit from analytic toolkits like the Joint Improvised Threat Defeat Organization's (JIDO) VOLTRON tool suite, and we strongly support continued investments to

develop next generation of Artificial Intelligence and analytic capabilities, as well as expanded data mining of open source and publicly available information. Additionally, we support Office of the Director of National Intelligence (ODNI) and the Defense Intelligence Agency's (DIA) efforts to enhance Intelligence Community (IC) capabilities in the exploitation of IC data and information, with the goals of identifying global transnational crime and illicit networks and improving collaboration and strategic planning across the intelligence and defense communities.

I know the situation in Venezuela weighs heavily on the minds of this Committee, as it could spark its own mass migration event, impacting economies and stability across the region and requiring a large-scale international humanitarian response. Crises of this magnitude can entail a significant, costly, and lengthy U.S. response, but are manageable with sufficient attention, prevention, and preparation. Continued support to the important work being done to plan and prepare to address humanitarian needs in Venezuela—especially by USAID's Offices of U.S. Foreign Disaster Assistance and Food For Peace and the State Department's Bureau of Population, Refugees, and Migration (PRM) —is essential.

And finally, Mr. Chairman, we need to do everything we can to improve interagency integration and efficiency at home, and remove barriers to our partnerships abroad. Put simply, we need to make it easier for our partners to work with us. Conditions placed on security assistance sometimes limit our ability to fully engage on critical issues like human rights, which may ultimately fail to meet Congressional intent. When we engage, we make a real and lasting difference and advance our national interests. Engagement with our partners is the strongest tool we have to strengthen our partners' capabilities as well as our own competitive advantage. Anything that hinders engagement, hinders progress. I look forward to continuing this discussion with the Congress in the year ahead.

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Conclusion. Mr. Chairman, allow me to return to the theme I touched on in my introduction. Our ability to sustain the levels of engagement needed to deal with these challenges isn't for a lack of strategy or a lack of willing partners. We simply run out of resources before we run out of mission sets. Last year I told this Committee that success or failure in this region depends on us, what we stand for, and what we do. By addressing problems early through modest investment and sustained engagement, we can ultimately lower the costs associated with addressing them.

Thank you again for your support to the men and women of USSOUTHCOM.

Senator INHOFE. Okay, Admiral, thank you very much. I appreciate it.

You just said in your opening statement, General Robinson, that I can defend the United States today. I know that is true. You and I have talked about this. But at what level of risk?

You know, when General Milley said—this is a quote. Before this committee, he said the most important of many challenges we face

is consistent, sustained, predictable funding over time. Now, we corrected that a little bit with our 2018 budget. So it is kind of predictable between now until the year 2020, but then it becomes unpredictable again.

I would like to have both of you just very briefly tell us at what level of risk are we able to do what we have to do today that you can tie directly to the unpredictability of the budget.

General ROBINSON. So, sir, I will start and then I will turn it over to the Admiral.

To me, predictability is everything. As a consumer of readiness, as the one that has to use the things that the service chiefs have to organize, train, and equip for, for me what is important is to understand what I have got out there for capabilities. So I am telling you today I can defend the United States of America when it comes to ballistic missile defense, given what we have done from a funding perspective but as importantly what we did with the ATR and adding capability, capacity in Alaska and what we continue to do with discriminating radars. So all of those things I am comfortable for. But we have to allow the services to be able to plan because they are the ones that provide us that readiness.

Senator INHOFE. Admiral?

Admiral TIDD. Sir, as you and I have discussed, anything that challenges the services' ability to provide the forces that we request to be able to effectively secure the southern approaches to the United States is a challenge. Budget unpredictability has probably been the single greatest impact on their ability to provide those forces.

The challenge that we have, when it comes to awareness of what is going on in the environment—we have already discussed our ISR [Intelligence Surveillance Reconnaissance] requirement. We receive about 8 percent of what we have asked for. I am very appreciative of the fact that about half of that has been provided as a direct result of creative contract ISR capabilities that the Congress has so generously funded. But that still is an enormous challenge.

Senator INHOFE. Yes, not just for you but for all commands. We hear that all the time, and that is one that we really need to be direct.

Senator Reed brought up China. I actually read your statement. Now, you did not cover it in your abbreviated message this morning, but you made a statement in there that caught my eye. You said that China in particular is increasing aggressive and courting IMET [International and Military Education and Training] students from the region to attend their military school. I have never heard that before. Now, I know in Africa, the IMET program is singularly one of the really truly great programs we have. Once we get them in with us, they are there for life, and we see evidence of this all the time. I was not aware that China is actually trying to move into that.

Could you kind of share that?

Admiral TIDD. Senator, I have long felt that the IMET program is probably our single greatest long-term investment, value for the dollar that we put into it. I would just highlight that it is an investment that sometimes may take 2 decades or more to pay off, but when it pays off, it pays off with relationships with strategic

partners that are absolutely critical. It creates the personal contacts that many of the military leaders from across the region that I work with on a day-to-day basis have participated in the IMET program, have studied at our war colleges, gone to our service schools.

China watches that very closely. They have recognized the value of that strategic investment. They basically have taken a leaf out of our book and they are very lavishly funding to bring senior military officers from a variety of key countries around our region to China for very lavishly expensed, all-expense-paid trips for them, for their families to be able to live a very high lifestyle in the countries.

There is still a recognition from our partners that the greatest value comes from studying in the United States. We believe our country sells itself, and when people come here, they get to know who we are, who our country really is, the values that we truly represent. We think that is a very, very important——

Senator INHOFE. Yes. We have always said once we get them over here, we have got them forever. That has been my experience particularly in Africa because they are there. It is very disturbing to me to hear that statement or observation that you made that they are actually going after the same individuals that we have already had. This is disturbing. It has given us something new to address, and I appreciate that very much.

Senator Reed?

Senator REED. Well, thank you very much, Mr. Chairman.

Let me concur. IMET is absolutely critical. In a way I have personal connections. Two of my classmates from West Point later went on to become chief of service in the Philippines and in Thailand. They have been staunch defenders of their countries but also our relationship. I think the President of Costa Rica was a West Point graduate, at least one of them.

That program is funded by the State Department. Correct?

Admiral TIDD. Yes, Senator, that is correct.

Senator REED. It is another example of, particularly in both of your commands, where whole-of-government—without funding State, there is no IMET. When we see some of these proposed cuts to State, it will play out in fewer opportunities for students to go to American war colleges, American military academies, et cetera. Is that accurate?

Admiral TIDD. Senator, I would agree completely.

Senator REED. In fact, again both of you represent in critical ways the need for not just the Department of Defense but Department of State, Homeland Security—Coast Guard cutters are part of your intercept plan for narcotics. In fact, what percentage of the destination of cargos that you knew were en route can you intercept?

Admiral TIDD. Senator, the challenge that we face right now is about 25 percent of vessels that we know that are transporting illicit materials—we can intercept about 25 percent.

Senator REED. So a quarter. If we could invest more in the Coast Guard, presumably we could intercept more than 25 percent of the ships.

Admiral TIDD. Senator, I believe security in our theater is a team sport. It requires the efforts of many departments and agencies.

Senator REED. Again, I think both you and General Robinson illustrate so dramatically how we have to get adequate funding for every significant national security component whether they are in the Defense Department or outside the Defense Department.

General Robinson, when you say you can defend the nation against missile attack, you are referring to a limited missile attack by a country such as North Korea. Correct?

General ROBINSON. Yes, sir.

Senator REED. You are not making a generalized statement.

General ROBINSON. No, sir.

Senator REED. Thank you. I just want to make that clear for the record.

General ROBINSON. I will defer all that to General Hyten.

Senator REED. In that issue you raised in your testimony, there is the constant tension between capacity and capability.

General ROBINSON. Yes.

Senator REED. We are investing lots of dollars in increased capacity. That is going to take a while, 5, 6, 7, or 8 years to get some of these new fields up. But at the immediate moment, we have real issues of capability whether we can effectively take down through sensors, through shot doctrine, through the kill vehicle anything coming at us. Particularly, unfortunately, the offense in this game seems to have an advantage if they can deploy decoys or multiple-stage rockets.

Can you comment now about this issue of where we should be focusing and how we should do it?

General ROBINSON. Yes. Sir, I have to tell you I am completely comfortable with where we are. The fact that in the above threshold reprogramming that we added capacity and then the redesigned kill vehicles—and I think it is 2022 when we will have those. At the same time, we are looking at discriminating radar. So in 2019, we are going to add the long-range discriminating radars to Alaska. We are going to add radars to Hawaii, and we are going to do a study on what we need as we look at Cobra Dane coming down. Thank you to the committee for funding Cobra Dane until we figure all this out. I am very comfortable where we are.

I think as we look at the discrimination of radars, we look at the capacity of the fields in Alaska, I think we are in a really good place because when we sit back and look at what Kim Jong-un has done, he is looking at capability. You and I talked about this. He has not built up capacity yet. Right now, our capacity is very good where we are and as we continue to move forward.

Senator REED. Are you satisfied with the schedule, the frequency, and the rigor of the testing of the system, the actual testing?

General ROBINSON. I am very comfortable. You know, one of the things that I say about Kim Jong-un all the time is that he is not afraid to fail in public. You learn as much from failure as you do from success. I am very comfortable where we are with our testing and where we are going in the future. I rely very much on General Reaves and where MDA [Missile Defense Agency] is going, and he and I talk all the time.

Senator REED. Thank you very much.

General ROBINSON. Yes, sir.

Senator REED. Again, thank you both for your service.

General ROBINSON. Yes, sir.

Senator INHOFE. Senator Wicker?

Senator WICKER. Admiral Tidd, thank you. Thank you both for your testimony and your service.

Admiral, our strategy now is great power competition first and foremost. Senator Inhofe asked you to drill down on China. So let me ask you to turn to Russia, which you discuss extensively in your written testimony. You mentioned Cuba, Nicaragua, and Venezuela. Is that principally where they are playing? What are they trying to do there and where else do we need to be concerned?

Admiral TIDD. Senator, those are the countries in which previously the Soviet Union had a longstanding relationship and Russia has continued that relationship. However, they continue to engage in a direct competition for influence with some of our key partners around the region.

Our challenge is to be able to disprove the false narrative that Russia peddles in the region, that the United States is withdrawing, that we are not a reliable partner. Many of the actions that we engage in are directly intended to show our partners, who are very much interested in working with us, that we in fact share common interests. We certainly share common democratic values and principles, which neither Russia nor China share.

Senator WICKER. You are not a diplomat. You are a military person. But if the President's new openness to the Trans-Pacific Partnership advances, would that be helpful to us in making the point that we can be a reliable partner?

Admiral TIDD. Senator, I do not profess to be either a diplomat or an economist, but I would just observe that the things that we do to show our partners directly—and we have Pacific-facing nations within the SOUTHCOM region—anything that we can do to show that we are reliable partners is valuable.

Senator WICKER. To what extent are we comfortable with the militaries of these countries subscribing to the position that we advocate and that we are the great standard of the military being answerable to the civilian leadership? To what extent are the members of their legislative bodies significant players in this regard?

Admiral TIDD. Senator, I think each of the countries differs slightly. My relationships are with the military leaders of the countries. My observations and my conversations genuinely reflect that they recognize and are grounded in the same democratic principles that really are characteristic, that were the founding characteristics of the Americas community. I think as we have seen, as a number of elections that have occurred throughout the region that led to changes in government positions, the militaries in each instance have played a very reasoned, responsible role, and they recognize that the ability to freely and fairly express democratic preferences as enshrined in the background of this theater have been respected. The one country I think that I would highlight, though, that has been singularly contrary to that has been Venezuela where recent elections have been neither free nor fair.

Senator WICKER. Very good.

Let me ask you quickly to shift to the ships, the role of the Coast Guard there. Clearly for you, it is going to continue being almost totally Coast Guard. If you could take a moment to say how you plan to integrate unmanned systems into your platform.

Admiral TIDD. Senator, I have said before on a number of occasions in the USSOUTHCOM region, my maritime force has white hulls and orange stripes. Frankly, if it were not for the United States Coast Guard and the significant effort by the Commandant, we would not have a maritime presence. That is not because my parent service, the United States Navy, does not recognize the very significant importance of the region. It is just a matter of strategic priorities and availability of forces, and we run out of forces before we run out of mission.

The Coast Guard cutters that have been participating are irreplaceable. The national security cutters, terrific when we get them. But the real workhorse, the cop on the beat vessels, are those medium endurance cutters, many of which are past 30 years in age. Some were built in the 1960s, and so the recapitalization of those medium endurance cutters with the offshore patrol cutters I view as extremely important to USSOUTHCOM's ability to provide an adequate maritime presence in our region.

Senator WICKER. Unmanned?

Admiral TIDD. Unmanned vessels? Unmanned aerial vehicles. There are some challenges procedurally to incorporate them in the missions that we are engaged in, but we are actively exploring efforts to be able to do that.

Senator WICKER. Thank you.

Senator INHOFE. Senator Peters?

Senator PETERS. Thank you, Mr. Chairman.

To our two witnesses, thank you for your service to our country. Thank you for being here today.

General Robinson, I am certainly pleased to hear that you have great confidence in our missile defense capabilities. I would also like to have you expand a little bit on how we can continue to strengthen those capabilities. We currently have, obviously, the site in California, as well as in Alaska. There is talk about having an east coast site that would provide additional capabilities, particularly given the potential threat from Iran at some point in the future. If you could talk a little bit about what the advantages would be to add a ground-based interceptor capacity at another location in addition to the two we have.

General ROBINSON. Sir, thanks for that.

I tell everybody that I watch North Korea with an eyeball and a half to North Korea and then a half an eyeball to Iran. As I continue to watch them work on their space launch vehicles, I know that they can maybe quickly transfer that to an intercontinental ballistic missile defense capability. Right now, they are very regional, and they are staying within the JCPOA [Joint Comprehensive Plan of Action].

As I work very closely with Missile Defense Agency understanding what we can do from Alaska and California, I ensure that I have the battlespace that I need to defend from the east coast. I pay attention to that each and every day, and as the Missile Defense Agency is working their way through what does it look like

for an east coast site, I ensure that my words and the battlespace that I need are there to defend the United States.

Senator PETERS. Thank you, General.

General ROBINSON. Yes, sir.

Senator PETERS. Admiral Tidd, you mentioned in some of your earlier testimony the situation in Venezuela and one that you are concerned about. Could you elaborate a little bit as to how concerned you are with what we are seeing in Venezuela?

Admiral TIDD. Senator, I think the fact that it is a matter of very significant concern to the nations that neighbor Venezuela is probably the most important piece to point out. As we have seen, the impact on Venezuelans who are fleeing the absolutely abominable economic conditions in the country puts a severe burden on the school systems, medical systems, the social support infrastructures particularly of Colombia where over 500,000 Venezuelans have now entered Colombia. It is putting an increasingly growing strain on Brazil where we have seen tens of thousands that have come across. It also places a significant burden on Guyana, on countries like Curacao and Aruba, as well as Trinidad and Tobago. It is having a very significant impact on those countries, and those countries recognize that they are going to have to be able to deal with this humanitarian crisis.

Senator PETERS. It is certainly very destabilizing to many of our allies and friends in that area.

I would like you to comment, if you would, on the involvement of Cuba in Venezuela. Things that I have read—there are commentators who believe that there are hundreds to perhaps thousands of Cuban troops in Venezuela. Some have said this is a play right out of the old Castro playbook. What is your assessment of Cuban influence in Venezuela, and how is that contributing to the instability that we are seeing?

Admiral TIDD. Senator, I think we have read some of the same documents, both open source and other. When I talk with, again, my counterparts in the region, they have been quick to share that we see significant presence of Cuban advisors to the security forces that continue to prop up the Maduro regime. I just think it is a matter of concern.

Senator PETERS. Well, thank you. I appreciate your testimony.

Senator INHOFE. Senator Rounds?

Senator ROUNDS. Thank you, Mr. Chairman.

General Robinson and Admiral Tidd, first of all, let me just say thank you very much for your service to our country.

Admiral Tidd, I would like to go back a little bit to what Senator Wicker was discussing with you. Basically in recent years, China, Russia, and Iran have all increased their activities in the western hemisphere from economic investments to military sales and engagement. Which of these competitors concerns you the most in your areas of responsibility? What are doing to maintain and expand our position as a partner of choice to Latin American and Caribbean nations? I understand the desire—and as you said earlier, you recognize that you will do what is necessary. I am wondering if you can give us some specific areas that you either intend to move forward with or that you would need additional assistance with.

Admiral TIDD. Well, Senator, without parsing, I think as the new National Defense Strategy has clearly articulated, Russia and China are significant concerns. They are global concerns and so they are of concern because they are very present and aggressive in the USSOUTHCOM theater.

Iran also is present. Particularly worrisome is their proxy Hezbollah, which is an area that we have been watching for many, many years and is an item of concern.

When it comes specifically to Russia and China, the very best thing that we can do is to be the best possible partners that we can with countries who are absolutely interested, committed, want to work with us. Sometimes there are just things that make it difficult for us to be the best partner that we can. Sometimes it is adequate forces for us to be able to engage with them and so to be able to conduct meaningful exercises with them, but also sometimes our ability to be able to work with them and facilitate the kinds of information sharing that is critical to having an effective common defense for the challenges that we face.

Senator ROUNDS. Let me work my way through it a little bit because I am really curious about such things as foreign military sales or foreign military financing for those military sales, international military education and training, the impact and so forth. Can you talk a little bit about those specific ones with regard to our ability to not only provide them with resources but also the training as well? Where are we at right now with those same partners? Is that working or is it not working? Do we have the resources allocated there that we need?

Admiral TIDD. Well, Senator, I do not know a theater commander who says he has got as many resources as he or she would like to have, but I would say that particularly with regard to the programs that you mentioned, FMS [Foreign Military Sales] and the IMET program, it is a small pie to begin with. The SOUTHCOM allocation of that pie is smaller still based on global priorities. Our challenge is to make that small slice of the pie go as far as it possibly can.

Now, sometimes programs that we offer—it is expensive for our partners to be able to come and live in the United States and bring their families with them and spend the time here. So that is where we really try to maximize both the number who are able to come and I guess the quality and the quantity, if you will, and finding that balance point can be a real challenge.

I think as far as particularly the IMET program, if there was one program that I would say is a long-term strategic investment—and like financial investments, sometimes they take a while to pay off, but when they pay off, they are absolutely priceless.

Senator ROUNDS. Okay, thank you.

General Robinson, our 114th fighter wing in Sioux Falls has been flying alert missions out of the March Air Base in California since 2012. We have four jets constantly deployed there and crews on a 24-hour flying alert basis that really are part of that critical defense team for our nation. NORAD recently requested 72 upgraded ASR [Airport Surveillance Radar] radars through a joint urgent operational needs request, and they have been funded to include for the aircraft of the 114th. The problem is that there are over 300

Air National Guard F–16's, and we are only going to modify 72 of them with this radar.

Our worry is that we will put real heavy wear and tear on those specific modified aircraft, and that we will only modify a handful of the aircraft, thus really wearing out that particular group.

The cost to upgrade these jets is approximately $2.1 million per jet, and compared to the additional capability gained, it is probably a pretty good buy.

Can you talk a little bit about your perspectives on whether or not we should upgrade the remaining F–16's in the Air National Guard alert squadron so that we are not focusing just on those 72 with that capability?

General ROBINSON. Yes, sir. I am working very closely with the Air Force on this. First of all, I am grateful to be able to modify those jets because that just happened recently. So that I think is a really good deal. But I continue to work with the Air Force on what does it look like as we not just modify airplanes but what does the transition to F–35's look like. I will look closely and ensure that not only do we not rely heavily on just those, but what does the long-term transition plan look like.

Senator ROUNDS. Very good. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Shaheen?

Senator SHAHEEN. Thank you, Mr. Chairman.

Thank you both for your service and for your testimony today.

General Robinson, I especially appreciate your comments about the support that everyone in the military receives and at NORAD from your families. I know that sentiment is shared by everyone on this committee. Thank you both.

Admiral Tidd, I want to go back to Senator Reed's question I think about the 25 percent. Did you characterize that as 25 percent of the missions that you could do, you are able to do, and because of the lack of resources, not able to do more than that?

Admiral TIDD. Senator, I think the way that we describe it and to clarify is we have pretty good situational awareness on an awful lot of the trafficking that is occurring, and that is based on a very close partnership with a variety of countries in the region, most notably with Colombia. Of the known tracks that we are aware of—and we think we have got a pretty good handle—we are only able to intercept about 25 percent, about one-quarter.

Senator SHAHEEN. Well, I am sure you are both aware of the challenges that we face with the opioid and heroin and drug epidemic in this country. It has hit New Hampshire particularly hard. Can you estimate, if you had the resources, that you could use to do all of the missions that you would like for all of the interdiction efforts that you are aware of, what difference would that make in terms of the amount of drugs you are able to interdict?

Admiral TIDD. Senator, you raise an excellent question. The challenge that we have particularly with regard to opioids—that is the reason we hosted the conference last week was because we recognize that what we knew and the procedures that we had in place did not seem to be having the kind of impact. It is because the supply chain of that particular illicit substance does not travel in the same way that the supply chain for, if you roll the clock back,

marijuana originally and then cocaine where we have well-understood and identified source zones, transit zones, arrival zones and we are able to lay across those various pathways a variety of primarily law enforcement but also intelligence community and military resources to have an impact on them. The opioid problem is a fundamentally different problem. We understand it is different.

I would say the value of last week's conference was bringing together many, many, many of the agencies that touch that problem at least on the interdiction side and recognize we have got to do business differently. I am not prepared to tell you that we have an answer to it yet, but we recognize the scope of the problem, the seriousness of the problem, and the work that remains to be done and our commitment to work together to put in place a more effective mechanism than what we are doing today.

Senator SHAHEEN. Thank you.

General Robinson, are you seeing similar on the northern border with Canada—are you seeing similar traces of drug runners coming across?

General ROBINSON. No, ma'am, not like what Admiral Tidd would talk about.

The one thing I would like to also add and give Admiral Tidd a lot of credit for is last month we had a meeting with he and I and Admiral Duran from Colombia and Admiral Soberon from Mexico to talk about as we watch things go from the land-based transit to the ocean-based transit, those two folks talking to each other about how do we decide how we are going to combat this together. So under his leadership, we had Colombia present a plan. We had Mexico present a plan. We had the U.S. present a plan. Now the three of us are going to sit down and go what is the best way we can do this from an open ocean perspective to try to get after that. This is not a single dimension conversation. This is a multi-dimension conversation, and it is a multi-combatant command conversation, which to me is what is really important is the fact that he and I stand side by side doing this.

Senator SHAHEEN. Well, thank you. I think it is very important, as you all know. I hope that we can provide additional resources to make sure that you are successful.

I want to pick up on another issue that Senator Reed raised with respect to funding for the State Department. You both talked about the importance of working across DOD and State in terms of what you are trying to accomplish. We have seen a proposed budget that would cut the Department of State by 30 percent. Can you quantify what that would mean in terms of your operations and your efforts to work with State if they saw that kind of a cut?

General ROBINSON. I do not know if I can give you a number that would mean anything, but here is what I do know. Every single day we talk about anything, Secretary Mattis diplomacy leads. The fact of the matter that he says diplomacy leads, then I know my role and responsibility is to support diplomacy. I cannot say is that 10, 20, 25 percent, but I can tell you that I know that I follow diplomacy.

Admiral TIDD. I would just add again—I cannot put a number—but so many of the programs that are critical to building effective partners across the region—actually they come out of the State

budget. We implement them, but we could not do it if they are underfunded.

Senator SHAHEEN. Well, thank you both. I think that is a very strong statement in terms of funding as we think about increasing funding for the military and Department of Defense. I know we are all on board for that, but we should also be on board for funding for the State Department and our diplomatic efforts.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Fischer?

Senator FISCHER. Thank you, Mr. Chairman.

Thank you both for being here today.

General Robinson, your opening statement discusses the increasing capabilities of Russian cruise missiles to hold targets in the Homeland at risk, and specifically you state, "These systems present an increasing threat to North America due to their long range, low radar cross section, and the limited indications and warnings likely to be seen prior to a combat launch." Can you elaborate and characterize this threat in further detail, and how much does it concern you?

General ROBINSON. So, ma'am, here is what I would say. I tell everybody we should often look at the map from the North Pole down. I know Senator Sullivan does every single day. We should look at the fact that Russia looks different if you look at it that way.

Then every single day I would tell you I get an operations and intelligence briefing that talks to me about where bombers are, where submarines are, and what they are doing and what their activity is. I pay attention to that every single day.

When I sit back and I look at that, I look at their capability, what they are capable of. I look at their capacity as they continue to train both their bomber pilots and their submarine pilots. But I look at intent. In the air domain, as the Commander of NORAD, I know from an intent perspective their intentions—I do not see that. But that does not mean from a strategic, long-term perspective, as we talked about in the National Defense Strategy what Russia is out there doing.

But I have to tell you. I have to tell you. So one of the things that we are doing is a northern approaches' surveillance analysis of alternatives with Canada to understand what is coming across the northern approaches, both Canada and Alaska, because I look across the entire part as the Commander of NORAD. What I have said to everybody is I want to be able to detect, ID, track, and engage if necessary at ranges to defend our Homeland. Those are the things I think about when I think about Russia.

Senator FISCHER. Your final comments there about being able to detect early and then engage, if necessary—do you think we have enough of that capability right now? I know that in fiscal year 2017, the Air Force began upgrading the radars on the 72 National Guard F–16 fighters. Is that going to be sufficient because is that not really our last line of defense at that point?

General ROBINSON. Yes. So, ma'am, what I would say is that is part of our Homeland defense phase one. In phase two, it allows us to use our fighters and tactics, techniques, and procedures to move out further than we were able to before. So we appreciate the

committee's support on that. But this is now the longer-range part, if I look at the northern approaches, specifically to be able to do that.

Senator FISCHER. I happen to believe that our missile defense system provides really an immense capability, and the expansion of that system is going to help us to continue to defend the Homeland as this threat increases.

Yet, over the weekend, General, we saw "The New York Times" editorial board publish a column titled "The Dangerous Illusion of Missile Defense." In it they described our Homeland defense system as riddled with flaws and repeated what I consider an old, tired claim that tests were not conducted under realistic conditions.

To be clear, do you have confidence in the ability of the GMD system to defend the United States from a North Korean ballistic missile attack today?

General ROBINSON. Ma'am, I am 100 percent confident in my ability to defend the United States of America.

Senator FISCHER. Do you believe the actions taken by Congress and this administration to expand the system's capacity and improve discrimination will enhance NORTHCOM's ability to defend the Homeland from ballistic missile attack in the future?

General ROBINSON. So, ma'am, I would tell you I appreciate the above-threshold reprogramming for the capacity that we gave, and I think that is helpful as we look at adding on to that the redesigned kill vehicle, in addition to continued work, which we need to do, with the discriminating radars. Between all of those three things, I think we continue to outpace everybody, and it gives me more and more confidence, continued confidence of our ability to defend the United States.

Senator FISCHER. Thank you, General, for presenting valuable information and very clear answers. Thank you.

Senator INHOFE. Senator Donnelly?

Senator DONNELLY. Thank you, Mr. Chairman.

I want to thank both the witnesses. Thank you for meeting this week as well.

I want to talk to you about what we talked about in my office, which is the opioid crisis. Last week, the Centers for Disease Control reported overdose deaths in Indiana increased by 28 percent from July 2015 to July 2016. Over 1,700 Hoosiers died from opioid overdoses. Only six States had larger percentage increases. But this is a national epidemic. It is getting worse, not better. Your commands are on the very front lines of this battle.

How would you prioritize the opioid crisis in your command priorities right now? General Robinson and then Admiral Tidd.

General ROBINSON. Sir, I take this opioid crisis as a personal issue. When you sit back and you talked about it and it is about families and it is about people, it is incredibly important.

I sit down every month and I talk to the Secretary of DHS [Department of Homeland Security]. I work very closely with my subordinate commanders who work very closely with Mexico on all of this.

This crisis is not something that I set aside. It is something that I take very personally. What is important to me is that I understand the support role that I can give to DHS and the support role

and information that I can give Mexico which then translates to the things that I can give to Admiral Tidd because the UCP [Unified Command Plan] line on the map does not exist for Admiral Tidd and I, and so it is a very personal thing.

Senator DONNELLY. Admiral Tidd?

Admiral TIDD. Senator, I share General Robinson—this is a crisis that has come to touch us all personally. The challenge that we face is that how do you handle it. How do you deal with it?

What became clear at our conference last week was the United States Department of Defense cannot solve this problem on its own. The Department of Homeland Security cannot solve this problem on its own. Health and Human Services cannot solve it on its own. It will only be through all of us working together in a collaborative manner. That is why our approach at USSOUTHCOM is to apply a threat network-based approach. That is our number one priority is threat networks.

Senator DONNELLY. I apologize because I have limited time.

These drugs are coming across from Mexico not through unguarded areas or anything but through checkpoints in the back of trucks. We are in a position of seeing the very checkpoints we have in our country allowing trucks in, many of these trucks loaded with drugs.

There are two questions. Number one is detection systems. In regards to fentanyl, tracker dogs die because of the effects of fentanyl on their mucus systems and other things. Where are we in finding new detection systems so we can determine whether these are in the trucks? Are we in a position where we simply need to say, look, your refrigerator is not coming in today. It is coming in in a month and a half because we are checking every box in every truck because it is more important that a young person in Logansport, Indiana be able to stay alive as opposed to having your refrigerator come in on time. First is detection systems, and second, should we just simply change the way we do business at the border and check every single box that comes in?

General ROBINSON. So, sir, I will tell you in the support role that we do for DHS, we have the opportunity to provide them some biometric detection capability. We have the opportunity to provide marine sensor platoons at the border—capability.

As you know and as you and I talked about yesterday, it is very much in a support role and the things that we can do from a technology capability. Last year in front of this committee, as you and I chatted about yesterday, Senator McCain asked us to talk about what are some of the technologies. We will come talk to you about some of the things that we are doing to provide and to support DHS.

Senator DONNELLY. Admiral?

Admiral TIDD. Sir, all I can say is there is no single silver bullet that is going to solve this problem. This is going to take the very best efforts across the entire national security team to be able to work together effectively.

Senator DONNELLY. Is there a discussion about changing the way we handle crossings at the border because that is where it is coming through? Not that you know of.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Perdue?

Senator PERDUE. Thank you both for being here. I have got a question about the NDS [National Defense Strategy]. Three quick questions before I get to the two on the NDS.

Admiral, to finish up on what Senator Shaheen was talking about—and before I do that, I would be remiss as a Member of the Senate not to apologize to both of you combatant commanders on behalf of the United States Senate. Today we are officially sitting in a continuing resolution again. You have my personal commitment and resolve that before I leave the United States Senate, we are going to do everything we can to get away from this budget process that puts us in this detrimental, high-risk situation. We are doing more to harm the security of our country than any of these people we are talking about today outside.

Sorry. Admiral, real quick. General Kelly talked about this too, but you have talked about—there is an asset that you could use in your AOR [Area of Responsibility] to actually interdict more. We do not know what percentage we can get to. I understand that. But you could close that gap without spending a lot of money. Is that true?

Admiral TIDD. I think there are some platforms out there that would be enormously helpful to us. Yes, sir.

Senator PERDUE. What would one of those look like?

Admiral TIDD. I think a littoral combat ship would fit perfectly into the mission space that we are——

Senator PERDUE. Rotary wing capability as well?

Admiral TIDD. Absolutely. It is a package. It is a vessel that is capable of operating in the eastern Pacific with rotary wing, with interceptor boats as a package, coupled with maritime patrol aircraft.

Senator PERDUE. In Latin America, Russia today is supplying 40 percent of the arms sales. China is the second largest trading partner in Latin America. Iran is in there through Hezbollah.

The question I have is the NDS is pivoting toward near-peer competitors. Heretofore, our mission in the last 15 to 17 years was mainly about terrorism. You were underfunded in SOUTHCOM because we were pushing resources out to the battle. Today the battle looks like it is getting closer and closer to home. Are you being resourced in order to support the NDS, and is the NDS focusing enough on greater power threats, peer power threats in our own hemisphere?

Admiral TIDD. Not yet. The NDS recognizes these challenging nations, and I think that we must move beyond applying resources to the home zip code of where those specific countries are and apply the resources to be able to deal with them wherever they are found across the globe.

Senator PERDUE. General, thank you for being here again and thank you for being on the wall.

The Arctic. China just last month issued a statement. Russia has been actively building resources in the Arctic. We see sorties or whatever in the Arctic region increasing at an exponential rate. Admiral, maybe I am going to ask you. I am sure you can too. I do not know how many icebreakers we technically have. We do not have very many. I think China or Russia has a multiple.

Can you talk about the threats in the Arctic? Are they increasing? What is Russia's and China's strategy? You told us last year about your strategic estimate. Can you give us an update on that strategic estimate in the Arctic?

General ROBINSON. Absolutely, sir. I did a strategic estimate. Out of that strategic estimate, I have directed by two-star planner to provide a mission analysis. As I have said to people, we have had our toes in the sand. It is time to put our feet in the snow, and it is time to understand more and more what is going on up there.

So out of that mission analysis, we are going to do a couple of exercises. We did a Vigilant Shield last fall. We are going to do an Arctic Edge. We will be able to understand certain tasks out of that. But at the same time, we know that we need to look at the infrastructure, the communications, and the domain awareness to understand what is happening.

Senator PERDUE. Both of you very quickly. I have limited time.

Our strength against these near-peer competitors is our network of allies. I know Secretary of State Tillerson has talked about that actively. Secretary Mattis has talked about that actively. In your AORs, what are we doing with our allies to help leverage our military expenses and capabilities? Admiral, do you want to address that quickly?

Admiral TIDD. We are working together to help train them. We are building their capabilities in the areas that they are most interested in, and we are showing by our actions that we trust them.

General ROBINSON. If I can tell you, earlier this year Secretary Mattis held a North America defense ministerial with Canada, the United States, and Mexico to talk about how do the three of us work together to show that we have the longest borders in the world and that we are a shining beacon of trust and cooperation.

Senator PERDUE. Thank you both.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Warren?

Senator WARREN. Thank you, Mr. Chairman.

Thank you to our witnesses for being here today.

General Robinson, I know you have said that you are confident in our Homeland defense. I was glad to see that the most recent test of our Homeland missile defense system in May of 2017 was successful. It brings our record to 9 out of 18, which is 50 percent. I know that testing is important. Whether tests succeed or fail, we gather a great deal of information and it helps us.

As the missile threat from North Korea increases and we invest additional interceptors to meet the threat, it seems to me that it is more important than ever that we accurately assess the reliability of this system. Physical tests are expensive and they cost hundreds of millions of dollars each.

Predictive modeling is one cost effective way to increase our data. But in his 2017 annual report, General Behler, the Director of Operational Test and Evaluation, criticized—and I am going to quote him—the lack of independent accreditation of modeling and simulation for performance assessment of our ballistic missile defense system. He recommended that Missile Defense Agency prioritize investments in modeling and simulation.

General Robinson, as NORTHCOM Commander, you are the primary customer for our Homeland missile defense system. Do you agree with General Behler's recommendation? Would increased modeling and simulation improve your confidence in ground-based missile defense system?

General ROBINSON. Ma'am, it is good to see you again.

Senator WARREN. Good to see you.

General ROBINSON. Thank you for that.

I would tell you two things. Modeling and simulation is as good as what you put in is what you get out. Right? I think it is very important that we do modeling and simulation, but I also think that the importance that Missile Defense Agency does with its live testing helps answer into all of that. When you take both the live part and you can input that into the modeling and simulation, that helps you with overall understanding.

I want to say to you again I am confident today in our ability to defend the United States. I think it is important, not just the live testing but the modeling and simulation, and put all of that together to make us understand where we are going.

Senator WARREN. Thank you, General.

You know, we have spent over $40 billion on the Homeland missile defense system. I do not think it is asking too much to expect it to work 100 percent of the time, and if that is not possible, to rethink our overall approach.

DOT&E [Director of Test and Evaluation] has been making the same recommendation that we invest in modeling since 2010. That is 8 years ago. I think it is time to take that recommendation seriously, not a substitute but as a both/and.

If I can, let me ask you one other question, and that is, General Robinson, your responsibilities include coordinating defense support to civil authorities in the event of a natural disaster. In 2017, Hurricanes Harvey, Irma, and Maria——

General ROBINSON. Nate and Ophelia.

Senator WARREN. That is right. Strained our federal response nearly to the breaking point.

I recently visited Puerto Rico, along with the Massachusetts congressional delegation, and we were able to see the damage firsthand. One sector that was particularly hard hit was health care. We previously talked about your decision to send the hospital ship *Comfort* for about seven weeks. I visited a hospital and a community health center that were still struggling without clean water, without reliable power months after the storm and more than a month after the *Comfort* had departed. Now, even though they have not recovered from last year's storms, they are all starting to prepare for the next round of hurricane season.

I am about out of time, but General Robinson, can you very briefly list, say, your top three lessons learned from Maria and whether there is more that DOD can do to support the health care sector specifically?

General ROBINSON. So, ma'am, I would tell you we just finished—very quickly—an internal NORTHCOM lessons learned conference. We are going to go out to OSD [Office of the Secretary of Defense]. The conversation that we had is, is there a difference between Texas, Florida, and Puerto Rico? So you have got state,

state, and island. So what can we learn out of that, and can we think about that differently? So I would tell you that would probably be the first thing that I would say back to you.

Once we finish through inside the Department, I would be happy to have me and my staff come talk to you about the things that we learned and interagency, quite frankly, because as you know better than I do, we are very much in a support role to FEMA [Federal Emergency Management Agency] and the Governor. We would be happy to come talk to you.

Senator WARREN. Good. I appreciate that, and I appreciate that you responded to my letter with a lot of detailed information about the *Comfort* and its use in Puerto Rico.

Mr. Chairman, with your permission, I would like to submit the letter from the General for the record.

Senator INHOFE. Without objection.

[The information follows:]

UNDER SECRETARY OF DEFENSE
2000 DEFENSE PENTAGON
WASHINGTON, DC 20301-2000

POLICY

JAN 11 2018

The Honorable Elizabeth Warren
U.S. Senate
Washington, D.C. 20510

Dear Senator Warren:

Thank you for your November 16, 2017, letter to the Secretary of Defense, requesting information about support provided by the USNS COMFORT to the response to Hurricane Maria in the Commonwealth of Puerto Rico. I am responding on behalf of the Secretary.

USNS COMFORT provided medical care for 6,003 outpatients during the course of its 45-day relief mission. Enclosed are the responses to your specific questions.

Thank you for your inquiry and for your continued support of the Department of Defense and the U.S. Armed Forces.

John Rood

John C. Rood

Enclosure:
As stated

1. How many patients has the USNS COMFORT treated since arriving in Puerto Rico? Please provide an overall total, as well as patient totals for each week the COMFORT has been in Puerto Rico. How did actual utilization compare to DoD expectations for utilization prior to the deployment decision?

RESPONSE:

a. USNS COMFORT provided medical care for 6,003 outpatients during the course of its 45-day relief mission (October 3 – November 17, 2017). Patients were treated both onboard USNS COMFORT and at pier-side U.S. Department of Health and Human Services (HHS) and Puerto Rico (PR) Department of Health (DoH) Disaster Medical Assistance Team (DMAT) tents. Of the 6,003 patients seen, a total of 1,993 patients were evaluated onboard the ship due to conditions requiring levels of care that exceeded the onshore treatment capabilities or direct referral to the ship via the PR DoH / Joint Forces Land Component Command (JFLCC) Medical Operations Center (MOC). A total of 290 patients were admitted.

b. Overall totals are listed above in para 1.a.; more specific totals are listed below (data for specific weeks in this period are not available):
   - October 3 – 26, 2017: Patients referred on board: 604; patients admitted: 103
   - October 27 – November 2, 2017: Patients referred onboard: 915; patients admitted: 114
   - November 3 – 9, 2017: Patients referred onboard: 328; patients admitted: 63
   - November 10 – 15, 2017: Patients referred onboard: 146; patients admitted: 10

c. USNS COMFORT deployed in its standard 250-bed Humanitarian Assistance/Disaster Response configuration and was prepared to respond as required.

2. Is the USNS COMFORT currently operating at full capacity? How many beds are currently filled aboard the ship? How many are empty?

RESPONSE:

USNS COMFORT never operated at full capacity and never had the requirement to increase its operational 250-bed configuration. It redeployed to home station on November 17, 2017, and is no longer in the Joint Operations Area (JOA).

3. Please provide an explanation for why, as of October 27, the USNS COMFORT was not operating at full capacity.

RESPONSE:

On October 27, 2017, patients were receiving care at multiple facilities, including local hospitals and clinics that were still operational and facilities operated by deployed DoD and HHS medical units. USNS COMFORT served as a backup facility to these local hospitals, clinics, and land-based DoD medical assets. USNS COMFORT was originally fully staffed to respond to a wide range of potential needs. The medical specialty composition and capacity of the staff were adjusted as the mission progressed and the medical requirements became better known.

4. Why was the USNS COMFORT offshore for weeks? How—and by whom—were the decisions made to move it from port in San Juan after its initial arrival, and then back to port?

RESPONSE:

In coordination with FEMA, HHS, and Puerto Rico officials, USNS COMFORT was tasked to relocate to multiple locations off the Puerto Rican coastline in an effort to ensure assistance was available for medically at risk areas. It initially served as backup for hospitals facing potential catastrophic failures. Once the local hospitals and clinics were able to support a majority of medical requirements across the island, USNS COMFORT stayed in the San Juan area, both off-shore and pier-side. Of note, when USNS COMFORT was pier-side, it could not efficiently resupply or process waste and was occupying limited port space supporting relief supply ships.

5. While the USNS was offshore, patients in Puerto Rico who sought medical treatment aboard the ship could do so only after receiving a referral from a local medical facility. Requiring a referral process from these hospitals further prolonged people's ability to receive the adequate medical attention that the COMFORT is equipped to provide. This was especially true because many Puerto Rican hospitals in the aftermath of the hurricane were understaffed, under-supplied, and functioning on emergency generator power. Why was this referral process put in place? What steps can Congress, the Administration, and the military take to streamline or eliminate the referral process in the future?

RESPONSE:

The purpose of the Puerto Rico Department of Health (PR DoH)/FEMA/HHS/DoD referral system was to align patient requirements with facility capabilities and capacities, balanced with the potential risk of patient movement. Given the array of medical capabilities available to the PR DoH, HHS, Joint Force Maritime Component Command (JFMCC), and Joint Force Land Component Command (JFLCC) Surgeon's Cell, this process helped share situational awareness of specific facility specialties/capabilities, capacities, demand signal, and shortfalls, and cross-level patient load across this community to help ensure access to required medical care. USNS COMFORT was one part of a larger strategic medical support infrastructure, with a specific role to perform.

6. Section 402 of the Stafford Act permits the President to "provide accelerated Federal assistance and Federal support where necessary to save lives, prevent human suffering, or mitigate severe damage, which may be provided in the absence of a specific request: by the Governor. Why didn't the President and his Administration exercise authorities under Section 402 to send the COMFORT to port sooner?

RESPONSE:

DoD is unaware whether use of Section 402 was considered with respect to the use of USNS COMFORT. The timeline associated with the request for deployment of USNS COMFORT is provided in Response 8, below. It is not clear that invoking Section 402 for the use of USNS COMFORT would have accelerated the arrival of USNS COMFORT.

7. What are Department protocols for providing access to hospital ships in disaster relief efforts and determining eligibility for treatment on such ships? Were other federal agencies, such as the Department of Health and Human Services, responsible for developing the protocols followed by the Department? Were these protocols followed in Puerto Rico? Is the Department, either alone or in conjunction with other federal agencies, considering any changes in protocol to avoid similar underutilization of hospital ships in future disaster relief efforts? If so, please provide a summary of those changes.

RESPONSE:

a. Every disaster response is unique, and employment of medical assets remains flexible and adaptable. All protocols for use of and referral of patients to USNS COMFORT during Hurricane Maria response were developed in coordination with FEMA, HHS, and Puerto Rican officials. Protocols and procedures for the optimal use of USNS COMFORT were modified as the response continued and the medical needs changed. Protocols and procedures were modified to improve response efforts throughout the mission.

b. Per normal procedures, DoD has initiated a series of after action reviews (AARs) into all aspects of the DoD role in the response. The U.S. Northern Command (USNORTHCOM) Surgeon's office and Component Command Surgeons have initiated their internal reviews. USNORTHCOM will host all the involved DoD medical entities and attending interagency partners for a unified Hurricanes Harvey/Irma/Maria medical AAR in January 2018. This conference will focus on improving medical procedures responding to future disasters. This AAR will include the use of USNS COMFORT as part of a holistic review of the medical support provided.

8. How are decisions made about deployment of the USNS COMFORT, and which individuals and agencies are responsible for making these decisions? Please provide an

explanation of the timeline of the USNS COMFORT's deployment. Why did the COMFORT not deploy to Puerto Rico until September 29, nine days after Hurricane Maria made landfall?

RESPONSE:

a. There is a FEMA Mission Assignment (MA) process to request DoD capabilities to support civil authorities; this process was followed while deploying USNS COMFORT. Specifically, in response to an MA from FEMA on September 23, 2017, U.S. Northern Command (USNORTHCOM) requested that the Secretary of Defense deploy a hospital ship.

b. Immediately following the passage of the storm, there was significant uncertainty in determining existing medical capabilities and defining requirements. Initially, the Governor of Puerto Rico declined the option of deploying USNS COMFORT. However, in light of emerging requirements, and prior to the receipt of an MA from FEMA, USNORTHCOM, through U.S. Fleet Forces Command and USNORTHCOM's Naval Component Command (NAVNORTH), coordinated prepare-to-deploy actions for USNS COMFORT, and it completed preparations and deployed on September 29, 2017. It arrived in the Joint Operations Area on October 3, 2017, and redeployed on November 17, 2017.

9. What is the COMFORT's anticipated deployment length? With the departure of LTG Jeffrey Buchanan, who led the federal government's military response on the island, will the COMFORT be far behind? Will the ship leave Puerto Rico while there is still an apparent need for its services, as indicated by the fact that it is at or near capacity?

RESPONSE:

LTG Buchanan departed Puerto Rico on November 13, 2017. However, he remains as the Joint Force Land Component Commander regardless of his physical location. After consultation with FEMA, HHS, and the Puerto Rico Department of Health on their required medical support capacity and specialties, USNS COMFORT was released. Following Secretary of Defense approval, USNS COMFORT redeployed on November 17, 2017, after serving 45 days in the Joint Operations Area.

10. In addition to the U.S. Navy, other military teams are providing medical care in the wake of Hurricane Maria. The Army's 14th Combat Surgical Hospital, for example, has reportedly established a 44-bed field hospital. Please provide a list of the military teams under the Department's purview that have set up and are providing care through hospital facilities, their capacity, and the number of patients each team has treated. What is the anticipated length of deployment for each military team?

RESPONSE:

Deployed DoD medical units are listed below:

- Army – 14th Combat support Hospital (14th CSH) – 44 Beds.
- Air Force – 331st Emergency Medical System (331 EMEDS) – 25 Beds.
- Army Area Support Medical Companies (ASMC) (335th, 602nd, 575th ASMCs) – 440 beds each; total of 1,320 beds. (Ohio also provided the Ohio National Guard 285th ASMC to Puerto Rico under the Emergency Management Assistance Compact, which provided an addition 440 beds.)

14th CSH Deployed Oct 13-Nov 12 (30 days)	PR Civilians Roosevelt Roads, PR	DoD	Total
In-Patients (total)	69	4	73
Out-Patients (total)	1,695	64	1,759

331 EMEDS Deployed Oct 25-Nov 12 (18 days)	PR Civilian Aquadilla, PR	DoD	Total
In-Patients (total)	4	3	7
Out-Patients (total)	1,480	293	1,773

335 ASMC Deployed Oct 16-Dec 13 (58 days)	PR Civilian Aquadilla, PR	DoD	Total
In-Patients (total)	0	0	0
Out-Patients (total)	3,718	10	3,728

285 ASMC Deployed Oct 14-Nov 10 (27 days)	PR Civilian Ponce, PR	DoD	Total
In-Patients (total)	0	0	0
Out-Patients (total)	772	14	786

602 ASMC Deployed Sep 16-Nov 07 (52 days)	USVI Civilian St. Thomas, USVI	DoD	Total
In-Patients (total)	0	0	0
Out-Patients (total)	1,124	40	1,164

575 ASMC Deployed Oct 13-Nov 17 (35 days)	USVI Civilian St. Croix, USVI	DoD	Total
In-Patients (total)	0	0	0
Out-Patients (total)	242	31	273

Senator WARREN. All right.

Just to say, Puerto Rico has still not recovered.

General ROBINSON. Yes, ma'am.

Senator WARREN. Health care has been a particularly hard hit area. DOD can move resources often much faster than anyone else, and I think we need to think much harder about the role that DOD plays in future hurricanes because we know they are coming.

General ROBINSON. Yes, ma'am.

Senator WARREN. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Cotton?

Senator COTTON. Thank you, General Robinson, Admiral Tidd, for your appearance and continued service.

Admiral Tidd, the President announced at the State of the Union Address that we would once again be moving detainees, where appropriate, to Guantanamo Bay. That falls under your authority. Can you tell us a little bit more about that plan and what you have in store for the facilities there?

Admiral TIDD. As has been the case, our responsibility is to ensure the safe, secure, legal detention of law of war detainees. I am highly confident that we have been doing that and we will continue to do that. You know, we have 41 detainees who are there right now. We are prepared to receive more should they be directed to us. As of today, we have not been given a warning order that new detainees might be heading in our direction, but our responsibility will be to integrate them effectively into that mission.

Senator COTTON. What about the facilities there and your personnel rotation plans?

Admiral TIDD. Thanks to the generosity, obviously, of Congress and spearheaded by this committee, we appreciate the support for barracks that are capable of withstanding the environmental conditions of the Caribbean region especially during storm season. We look forward, once the money is in hand, to be able to start construction on those barracks. I can anticipate, although I do not have a plan for you today—there were a variety of buildings that were temporary in nature when they were put up that have deteriorated beyond their useful life. We will be taking a hard look and prioritizing those buildings that will need to be replaced with facilities capable of withstanding the environmental conditions in Guantanamo Bay.

Senator COTTON. Thank you.

Let us turn our attention to the south. You have already spoken with a couple Senators about the situation in Venezuela, which is rapidly deteriorating under the brutal Maduro dictatorship. Can you talk to me about the implication it has for Colombian security and especially the impact it could have in the Colombian elections coming up?

Admiral TIDD. Yes, Senator, thanks.

Because of the significant number of Venezuelans, over 500,000 and continuing to rise, Venezuelans who have come across the border into Colombia overwhelming their social support infrastructure, Colombia has, I think, a grave concern.

They are also beginning to see—and this is based on conversations with my Colombian partners. They are very concerned that

there are a large number of Venezuelans who are being pushed across the border, that are being encouraged to vote in elections. They have dual citizenship as Colombia and Venezuela. There is some concern that that may skew the elections that will be very critical taking place this spring and summer in Colombia.

It is a matter of a security concern to Colombia, but those security concerns I think are largely shared by Brazil. Numbers are not as great yet, but it is beginning to overwhelm the states that are directly across the border from Venezuela, and we are seeing it affecting other countries across the region. The humanitarian disaster is in progress, and our partners are very concerned about it.

Senator COTTON. Thank you, Admiral Tidd.

General Robinson, I want to ask you about a story that was in the news recently, the use by service members of smart exercise devices, for instance, Fitbits or smart watches, particularly overseas. But you, obviously, underneath your authorities have a lot of sensitive sites here in the United States. Could you tell us what steps, if any, NORTHCOM has started to take to address this security risk?

General ROBINSON. Sir, Senator, thanks for that.

I would tell you as I watch and I work through the service chiefs and to see what they are doing, while I worry about force protection in all of the installations, I work it through the service chiefs. So I am paying attention to the steps that they are taking to make sure I understand to ensure that I can implement anything that they need me to do.

Senator COTTON. You feel comfortable at this point with what the services are pursuing?

General ROBINSON. Yes, sir.

Senator COTTON. Okay.

Thank you both for your testimony and for your service.

Senator INHOFE. Senator King?

Senator KING. Thank you, Mr. Chairman.

Admiral Tidd, since we have been talking here this morning, four people in this country have died of overdoses just in the last hour. As many people have died in the last month as were killed on September 11th, including one a day in my State of Maine.

I cannot believe we are having the same conversation today that I remember having with General Kelly 2 or 3 years ago and getting this figure of 8 percent of ISR resources and 25 percent of known drug shipments interdicted, 75 percent get through.

I think you have identified the problem. If we give you a mission, you will deal with it. The problem is nobody has this mission. I hope you will go back and talk to this interagency group and talk to the White House. It is inexcusable to be sitting here 3 or 4 years later and still only being able to interdict 25 percent of the drug shipments that we know about, and we would know about more if we had adequate ISR. This is simply a question of allocation of resources. This is the most serious public health problem this country faces. Four people have died in the last hour, and you are giving me the same figures that General Kelly gave 3 or 4 years ago.

Can you commit to me that you will move this to the highest level of priority and kick some behinds and take some names in

this interagency cooperation? Please do not come back here again next year with the same testimony.

Admiral TIDD. Senator, I can commit to you that not only will I but I have continued to communicate the challenge that we face. I will observe the services—the biggest challenge they have to being able to provide additional resources, which they recognize very clearly are required, are challenged by the inability to have budget predictability to be able to produce more forces to make them available. This is a team sport. This is a team effort. We have to work together as constructively and collaboratively as possible.

My commitment to you is that I will do everything within my power to do my part.

Senator KING. Hopefully we have just passed a 2-year budget authorization. Hopefully again we will have the final numbers within the next two or three weeks, and then we will be able to move forward. But please make this the highest priority. I am not attacking you. I am attacking the failure of our structure to adequately get at a problem when we have it right in front of us. It would be one thing if we did not know, but when we have it right in front of us.

General Robinson, let us move north. First question. We all know that there is a Russian buildup along the northern border along the Arctic Ocean. What is their purpose? What can you discern? What is their strategic reason for doing this? Is it defensive, offensive? Are they looking to get closer to be able to attack us, or are they simply protecting their shore?

General ROBINSON. Sir, I would say I think what you just said at the last is great, protecting their shore. You know, as you and I chatted about the other day, the opportunity for them to move their infrastructure around to their different bases is incredibly important, just like I do. You know, I move capability from Anchorage to Eielson, from Eielson to Inuvik, from Inuvik to Tuele. We move things around. But it is to make sure that they can put things in the places they want to at the time and place of their choosing.

Senator KING. I think you made an important point earlier that there are two elements of national strategy. One is capability. The other is intent.

General ROBINSON. Yes, sir.

Senator KING. The problem is right now they may have a benign intent or a lack of malicious intent. I would put it that way. But they are building up the capability which requires that we have to be alert. Are there assets you need in the north that you do not have, for example, an icebreaker?

General ROBINSON. Sir, I will defer to my colleagues in the Coast Guard for the icebreakers. But what I will tell you is that I very much get ISR [intelligence, surveillance and reconnaissance] capability in Global Hawk and other things that I share with EUCOM [United States European Command] and PACOM [United States Pacific Command] to understand what is happening in the region. But I will tell you I am very good at advocating for needing other capabilities such as, as an example, if you want, icebreakers. I talk with my Coast Guard brothers often about this because I think about it in the summer when Crystal Serenity goes through.

Senator KING. We are going to see more of that.

General ROBINSON. Yes, sir.

Senator KING. A final short question. If you had to choose, if you could only have one priority in order to improve our missile defense system, what would it be?

General ROBINSON. I want to thank the Congress for the capacity that we just got, but we have got to keep our eye on discriminating radars.

Senator KING. That is what I thought you would answer, and I think that has got to be a very high priority.

General ROBINSON. Yes, sir.

Senator KING. Thank you. Thank you both.

Senator INHOFE. Senator Ernst?

Senator ERNST. Thank you, Mr. Chair.

General Robinson, Admiral Tidd, thank you very much. Sergeant Major, nice to have you here as well. Thank you very much for joining us.

General Robinson, yesterday we had the opportunity to talk about the counter-weapons of mass destruction activities that we have going on here in the Homeland. SOCOM now has the responsibility for countering weapons of mass destruction, but it is something, once it approaches the Homeland, we need to figure out how to respond to that. You have a great role in that, as well as number of other combatant commands, departments, and agencies.

One thing I want to point out is we tend to focus a lot about North Korea and the threat that their nuclear program might have on the United States. We have to remember there are other things involved with weapons of mass destruction: chemical, biological, and radiological agents as well. We know that North Korea does have the potential to develop some of those other threatening means to the United States.

Can you talk a little bit about how NORTHCOM works with all of these other COCOMs [combatant command], various federal agencies, how are we protecting the Homeland not just from the nuclear threat but some of the other threats as well?

General ROBINSON. Yes, ma'am. Thanks.

First of all, I think one of the things that I really enjoy is my opportunity and privilege to work with DHS, FEMA, and all the other intelligence agencies here in the Homeland. I have Joint Task Force Civil Support in Virginia, an amazing guard unit, that works very focused on the chemical and biological reaction. But I have other task forces in the guard that help respond. One of them is yours.

For me, that whole relationship with the governors and with the TAGs [The Adjutant General] to bring the forces to bear when we need them to be there, independent of the niche capability that JTF [Joint Task Force] Civil Support provides to me from Virginia, but in addition to forces that other guard units provide are amazing. It is understanding what is going to happen here. You heard me talk about earlier about our exercise Ardent Sentry, and you heard me talk about understanding what the nuclear capability can do. So it is understanding now the forces that we would need to support and defend governors and States.

Senator ERNST. Thank you.

We mentioned yesterday too those civil support teams and others that work behind the scene. They truly are those quiet professionals.

General ROBINSON. Yes, ma'am. They are the quiet professionals. Yes, ma'am.

Senator ERNST. Thank you very much for that.

Admiral Tidd, thank you also for sitting down with me and going through a number of really concerning issues. You have heard a lot of impassioned speeches from our Senators today. I think we are all very concerned about the illicit trade that goes on and terrorism throughout the region. We know that there is the trade of drugs, tobacco, weapons illicit and sometimes, in cases, human trafficking. Sometimes they are generating revenue for terrorist organizations like Hezbollah.

Can you explain how you are trying to tighten down on that nexus? Can you specifically address our wonderful partners throughout the region, some of the countries that have helped step up and combat some of these problems?

Admiral TIDD. Senator, thanks for your question.

I think the way that we have reoriented the way that we do business in our main effort, being countering threat networks, is specifically intended to maximize the tools that we within the Department of Defense bring to bear into this interagency and international partnership to be able to counter these threat networks regardless of what commodity that they are moving.

Partners like Colombia have been absolutely irreplaceable, their willingness to work with us, to share information with us, to be partners not just within Colombia but also working side by side with Central American neighbors to help them build their capacity to be able to deal with, track down, apply pressure on, and disrupt these threat networks.

I would highlight the terrific work that has been going on that General Robinson and all of her work with the armed forces of Mexico, SEDENA and SEMAR. Mexico is now exerting I think a significant interest in helping to improve security in Central America. We work together in partnership, NORTHCOM and SOUTHCOM together, to facilitate that particular type of activity.

Many other partners throughout the region. We have got capable partners. I would highlight a few, and just working around the continent, Brazil. Argentina has now come on strong and played a critical role. Chile has for many years been one of the premier security partners in the region. Peru is now a very significant partner. Again, I come to Colombia as probably our single most significant strategic partner in the region.

Senator ERNST. Thank you very much. I think it is important that we realize we do have solid partners in the region. It is not all on our shoulders. We cannot do it without them.

Admiral TIDD. Far from it.

Senator ERNST. I appreciate your service. Thank you very much for being here today.

Admiral TIDD. Thank you, Senator.

Senator INHOFE. Senator McCaskill?

Senator MCCASKILL. Thank you, Mr. Chairman.

Thank you both for serving and thank you for being here today.

I am not going to plow ground that has already been gone over as it relates to opioids. I just want to echo that the threat of black market fentanyl to the safety and security of Americans probably tops just about anything else we are facing right now. I do think it is an all hands on deck moment for every part of our national security apparatus.

I wanted to specifically ask about CBRN [chemical, biological, radiological and nuclear], and for people that might be watching this that are not yet used—or maybe never want to get used to all the acronyms, obviously that is chemical, biological, radiological, and nuclear schools that we have in the military.

As we look at North Korea and what they are doing, clearly there is an issue about readiness as it relates to the training that we need to have in terms of dirty bombs and biological weapons and obviously the potential that there could possibly be a nuclear threat to our country.

What I wanted to ask, General Robinson, do you not think it might be wise if we started using our military schools, on a space available basis, our CBRN training programs, to start to begin to put some civilian first responders into that training that could really be a force multiplier? Because if we are actually in an armed conflict with North Korea, we are really going to be stretched because there are still going to be trouble spots throughout the world. It just seems to me if we have got space available and we have got the infrastructure, that it would be a really good idea that we would begin opening those doors more widely to police departments and fire departments and other first responders in our country to get this really important response training to that kind of attack from our enemy.

General ROBINSON. Ma'am, when I first took over command at NORTHCOM and NORAD, I think it was about a week I was there and we had this exercise that was called Ardent Sentry. It was about I–5 corridor, earthquake, you know, all those things happening. When I walked into the room, there were 200 people, 300 people in this room. I looked at one of my predecessors, General Jacoby, and I go who are all these people. What I discovered in this exercise was the fact that it was local, state, and TAGs and folks from emergency managers from all the States that would be involved in that.

Last year, we had the same exercise, and it had to do with a 10-kiloton nuclear event in New York City. So the same thing. We had local, state, emergency responders, and all of that.

When Secretary Kelly took over, he said, Lori, I want to talk about let us think about how we are going to do this should something happen with North Korea, and then just recently Secretary Nielsen.

Ma'am, we are all doing this together saying what does it look like, how do we go forward with this to understand that.

Senator MCCASKILL. Well, I would like to consider, with the chairman's, hopefully, support and bipartisan support, something in the NDAA [National Defense Authorization Act] that would open up training slots in our military CBRN schools to first responders just on a space-available basis.

General ROBINSON. Ma'am, I would be happy to work with the committee.

Senator MCCASKILL. That would be I think terrific. I know we have a great one at Fort Leonard Wood. But there are times that the infrastructure that is there is not being fully utilized. It just seems to me this would be a hand in glove fit for the threats that we face.

General ROBINSON. You know, come talk to me. I will have my staff talk to yours, and I would be happy to work with the committee.

Senator MCCASKILL. Thank you very much, General.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Kaine?

Senator KAINE. Thank you, Mr. Chair.

Thanks to the witnesses.

General Robinson, sometimes at these hearings I ask questions to get information, sometimes to make a point, and sometimes to educate the public about something that I think I already know but I think the public should know. My question is going to be in that category, trying to educate the public about something important.

Within the last month, about a month or so ago, we had two news reports on successive days that caused some real alarm among citizens in Hawaii. There was an emergency alert sent out suggesting that there was an incoming missile attack. It took 38 minutes for that improper emergency alert to be, I guess, retrieved. Then a couple of days later, the Japanese news agency NHK put out a warning about an incoming missile attack from North Korea that I think was corrected within a few minutes. But in each event, these things caused a whole lot of public concern.

I was in a classified hearing recently where I had a chance to ask—and I think this is actually non-classified material, and I hope you can get there. I was able to ask the question of our military leadership, when these false warnings went out, did our military immediately realize—how quickly did the military realize that these were not attacks? I think that is the kind of thing that gives comfort to people that there might be a false warning but our military understands it pretty quickly, which reduces the risk then of an accidental provocation, accidental military action.

From your perspective as NORTHCOM Commander with NORAD under your jurisdiction, can you talk a little bit about those two incidents and how quickly we were able to confirm that these in fact were not missile attacks?

General ROBINSON. Sir, in this unclassified hearing, I can tell you very comfortably and confidently we were quickly to confirm that nothing had happened.

Senator KAINE. That is, I think, an important thing for the public to know.

General ROBINSON. But I do want to just say at the first indications of a missile launch, NORAD and NORTHCOM command centers will initiate a conference call to process the event and make an attack assessment. FEMA ops center and their alternate ops center is a part of that call. I would like to add that into the record.

Senator KAINE. Right. There are a lot of folks who are reaching the same conclusion.

General ROBINSON. Yes, sir.

Senator KAINE. That is comforting, I think, for people to know.

Let me ask you, Admiral Tidd. You talked a little bit in response to Senator Perdue's question about the training that we do with SOUTHCOM partners. It is the case that nations in your area are purchasing more from Russia. There is activity by Russia, by Iran, by China. But talk a little bit more about the training side because I have had a chance to see some of the training in action, and I am very, very impressed with the kind of training we do, the degree to which these nations want us to be their partner, the relationships you build. Somebody you are training might be the defense minister in 10 years or the president in 20 years. But talk about some of the nations and the training exercises currently underway between the U.S. and nations in your command.

Admiral TIDD. Senator, there is no doubt in my mind that the countries that we work with unanimously prefer working with the United States because we work together as equal partners, because we work together defending the same interests, the same values, the same piece of the hemisphere together. So we try to find ways to make it as easy as we possibly can.

We could not do that without the enormous support of, for instance, our state partner program, National Guard units that are active in virtually every country throughout our region. They provide that long-term contact, personal relationships many times with these countries that is valuable and that helps build their capability and capacity.

I mentioned previously the enormous importance of our very, very small but capable special operations forces that come down and work with partner nations. They are highly respected both for their professional ability but also for their ability to work together and to understand how to meet the needs of particular countries. I have told General Tony Thomas he is oftentimes my most important force provider, and special operations forces over and over again are my major maneuver force. Small, small numbers but critically important throughout this region.

Also other reserve forces, the regionally aligned force that the Army provides, could not do a lot of the training that we do in Central America.

Last but absolutely not least, our special purpose marine air-ground task force that 6 months out of the year during the hurricane season, come down, work with partner nations, build their capacity, build their resilience to deal with disaster response, and then when the need arises, if a disaster occurs—and for the last 2-years, they have been directly employed in disaster response operations throughout our theater.

Senator KAINE. I have had the opportunity to witness some of these. In Honduras, deployment of mobile medical clinics to remote areas which have a humanitarian purpose but also help train our own folks to do deployment of medical clinics in combat, if we need to. I have watched training in Colombia where I have watched not only training on military tactics but respect for the rule of law and proper respect for human rights during the time when the war was going on against the FARC. I have seen the value of these trainings. I also know sometimes it is these kind of training exer-

cises that get really squeezed in budget pressures. That is one of my hopes with the budget that we have recently announced that you will have the opportunity to continue to build those relationships, which I think put us in a much stronger position.

Thank you, Mr. Chair.

Senator INHOFE. Senator Blumenthal?

Senator BLUMENTHAL. Thanks, Mr. Chairman.

General Robinson, I have been to Puerto Rico twice, and I have been impressed by the complete inadequacy of the federal response to fellow Americans there. As we speak, I think a third of the island's population lacks electricity. The economy is struggling. In fact, it is on the brink of bankruptcy if not there. The Army Corps of Engineers and FEMA have worked hard. People on the ground are devoting themselves valiantly, but my sense is that there is a lack of resources from the Federal Government.

I recognize that NORTHCOM is in a support mission there. I wonder—and I know Senator Warren has asked about it, and you have said you are conducting a review—whether you have any preliminary insights or observations for this committee about what could or should have been done differently.

General ROBINSON. Sir, one of the things I talk about all the time is every hurricane has its own characteristics. One of the characteristics of this hurricane season was there were five hurricanes. People forget about Nate, and we forget that Ophelia was out there. But the fact of the matter is Puerto Rico is an island, and that is different than Texas and that is different than Florida. That is different than other things that we have seen.

One of the things that we are going to go back and look at—and we did an internal review inside of my command, we are going to do inside of the Department—so how do we think about that differently. Do we have force structures set up appropriately? Do we the have things that we need? Because at the end of the day, sir, as you know, we support the governor and we support FEMA, and we provide niche unique capabilities that at that place, as an example, that the guard might not have, and ensure that we have it positioned at the right place at the right time to be there when it is necessary.

Senator BLUMENTHAL. Do you think that FEMA and other federal agencies made full use of the resources that you could offer?

General ROBINSON. Sir, I would say it this way. Secretary Mattis told me I could have whatever I needed whenever I needed it. Whenever it was asked for, I had a——

Senator BLUMENTHAL. But my question is did they make sufficient use of——

General ROBINSON. Sir, we have not had the ability to have an interagency top-down conversation about that. I think that is a different conversation. I think what is important is the fact that Secretary Mattis said I could have what I needed when I needed it.

Senator BLUMENTHAL. He said to this committee that he would make available whatever was necessary when it was needed.

General ROBINSON. Yes, sir.

Senator BLUMENTHAL. I have no doubt about the availability and your readiness and your willingness. I am asking about resources that were unused because they were unasked for.

General ROBINSON. Since we have not had a lessons learned across the interagency, I would not want to answer that conversation.

Senator BLUMENTHAL. Admiral Tidd, my understanding is that Hezbollah is very active in a number of South American countries, particularly in money laundering, drug trading. Is that your observation as well?

Admiral TIDD. Yes, Senator, it is.

Senator BLUMENTHAL. What actions are being taken against Hezbollah?

Admiral TIDD. Senator, we have been watching Hezbollah for a number of decades now because, as you well recognize, they have been in this hemisphere for a while engaged largely in criminal activities supporting their terrorist activities abroad. They are the A team that has been mentioned from time to time. We are watching what they are doing, working with our partners and with the intelligence community within our country teams and increasingly with partner nations to be aware of what they are doing and to not be surprised.

Senator BLUMENTHAL. Should there be more action as opposed to watching? Have we reached the point where the United States needs to be more actively engaged in light of its interests in the Middle East?

Admiral TIDD. Senator, these actions are taking place in sovereign nations that have their laws that they are applying. We are making sure they have got the best information available to them to apply their laws.

Senator BLUMENTHAL. Thank you very much.

Thank you, Mr. Chairman.

Senator INHOFE. This may fall into the category of Senator Kaine's educating the public, but I would only say that we have had a lot of varying experiences with Puerto Rico. I can remember one that was not pleasant, and that was when I personally lost the battle of Vieques. They had the only area where we had the joint training capability, and searching worldwide, we were not able to replace that. We did not get the cooperation that we should have gotten, and it had some adverse effects.

Following up a little bit on Senator Cotton's comments about Gitmo, Admiral, what I would like to do—I was very critical of President Obama when he was trying to close Gitmo. One of his alternatives—what are you going to do with all these guys you pick up—was to put them into incarceration within the United States. One such place happened that was suggested by that administration was Fort Sill in Oklahoma. Obviously, you cannot put—these are not prisoners. These are not criminals. These are enemy combatants. You cannot put them in and intermingle them with the prison population. Their job is to teach other people to be terrorists. I am really concerned, as we follow through with this.

I was happy when the President, in his State of the Union message, talked about expanding, keeping open that great resource that we have there. I am very anxious for that to happen.

So what I would like to have you do, Admiral, is kind of monitor that, let us know why we are not using it more already because I know that there have been some placements that took place. If you

could do that for me, I would appreciate that very much and follow through with that.

Admiral TIDD. I will, Senator.

[The information referred to follows:]

Admiral TIDD. As of today, we have 41 detainees at the detention facility at Guantanamo Bay. We have not yet received any additional detainees, but we are prepared to receive them if the decision is made to send them. Questions of where to place law of war detainees, however, are ultimately policy decisions.

Senator INHOFE. I had one last comment to make. Why do you not go ahead, Senator Reed?

Senator REED. No, sir.

Senator INHOFE. This would go to the gentleman sitting behind General Robinson. We share a best friend whose name is Sublett. Sublett actually had a lot of missions in Vietnam, I think about 300 of them. When he got out—they changed the 570th—and you are aware of this—from the F–16 mission to a refueling mission. When that happened, he took retirement from the reserves. I was his speaker at the retirement. He wanted to keep flying. I am still a flight instructor. So what I had to do, I say to you, David, was I took the awesome responsibility. You know, anyone can fly fast. I had to teach Charles Sublett how to fly slow. I had to say something you were not aware of, and that is it.

Any further comments?

Senator REED. I cannot top that, Mr. Chairman.

Senator INHOFE. All right.

Anything more?

[No response.]

Senator INHOFE. Well, we are adjourned and we appreciate very much your willingness and your straightforward answers to the questions. You both did a great job. Thanks so much.

[Whereupon, at 11:15 a.m., the committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

GREAT RIVALRY WITH RUSSIA AND CHINA

1. Senator SULLIVAN. General Robinson, the new National Defense Strategy declares the DOD's highest priorities are the strategic competition with Russia and China. I am particularly concerned about this competition playing out in the critically strategic Arctic region. The Russian are flying off our coastlines, including near Alaska. The Chinese are operating naval vessels in the Bering Sea.

What specific capabilities have you advocated for in the Arctic region to help us counter this growing threat? Are any of them currently fielded?

General ROBINSON. Through the USNORTHCOM Arctic Capabilities Advocacy Working Group, we have identified four key enablers to ensure security, safety, and defense cooperation in the Arctic region: communication, domain awareness, infrastructure, and presence. We coordinate closely with the other combatant commands the military Services, defense agencies, and the Canadian Department of National Defense to advocate for Arctic capabilities in light of evolving defense requirements.

To improve communication and domain awareness, we successfully advocated for funding of the Enhanced Polar System and the Mobile User Objective System to enable high latitude voice and data transmission. USNORTHCOM is also participating in OSD's Wideband Communications Services Analysis of Alternatives which began in fiscal year 2017 and will participate in OSD's Narrowband Analysis of Alternatives, which will be funded by the U.S. Navy in fiscal year 2019, to explore options for enhanced Arctic communications capabilities.

NORAD and USNORTHCOM advocacy led to fiscal year 2017 funding of the Northern Approaches Surveillance Analysis of Alternatives to identify options to im-

prove persistent, wide-area air surveillance of the northern approaches to the continent. As part of an ongoing effort, USNORTHCOM received Coalition Warfare Program funds to advance fielding of the Next Generation Over-the-Horizon Radar, and we continue to advocate for increased national and theater intelligence, surveillance, and reconnaissance capacity and capability.

Regarding infrastructure and presence, we were successful in advocating for exercise-related funding to build a barracks in Alaska to support joint exercises and training. We have also requested that the U.S. Army provide funding for the Joint, All-weather, All-Terrain Vehicles program. While not a Department of Defense program, we strongly advocated for the U.S. Coast Guard's ice-breaking mission, requirements, and ongoing assessment of ice-breaker requirements and the development of those platforms, as well as the Coast Guard's recently announced plans to build new icebreakers.

2. Senator SULLIVAN. General Robinson, in your testimony you talk about "scalable infrastructure in the Arctic." What exactly does that look like?

General ROBINSON. Scalable infrastructure refers to capability we can temporarily deploy to a specific location to accomplish a specific mission, such as deploying the Arctic Sustainment Package to support a search and rescue incident.

3. Senator SULLIVAN. General Robinson, we clearly are falling behind in the Arctic—to both the Russians and seemingly the Chinese now—what more can this committee do to help us catch up?

General ROBINSON. While we presently assess that the likelihood of military conflict in the Arctic remains low, safeguarding North America is inherently linked to the Commands' ability to operate in the Arctic environment across each of our assigned missions. There is always the potential that changes in Russian intent and increased Chinese activity in the Arctic that could result in miscalculation and instability in the region. Presently, we have sufficient military capability to accomplish my assigned missions. I will continue to keep the Committee informed of emerging threats and challenges in the region, as well as associated requirements to address those threats.

ARCTIC PORT

4. Senator SULLIVAN. General Robinson, as the USNORTHCOM Commander, you are assigned the role as "Advocate for Arctic Capabilities." Have you advocated for a Strategic Arctic Port, something supported by this committee?

General ROBINSON. Based on current assessments, we have not advocated for a Strategic Arctic Port to date. However, we continually monitor activity and the strategic environment in the Arctic region to ensure we retain the capability and capacity to address any potential threat and protect our national interests. Should conditions evolve in a manner that merits reconsideration of the need for a new strategic Arctic port, I will make that requirement known to the Department of Defense and to the Congressional defense committees.

RUSSIA—FLIGHT ACTIVITY

5. Senator SULLIVAN. General Robinson, in light of Russia's attempts to intrude on our nation's coastlines, how do you explain the decline in Russian air activity since the record levels observed during the 2014 Ukraine crisis?

General ROBINSON. Russia relies primarily on its Long Range Aviation TU–95 BEAR H heavy bombers to conduct flights near North America. Russia suffered a series of BEAR H accidents in 2015, which led the Russian Aerospace Command to ground the fleet for an extended period. Moscow also started its refitting and modernization of the entire heavy bomber fleet at about the same time, not only to address the immediate safety of flight issues but also to increase the BEAR H fleet's capabilities for 21st Century operations. While this refit and modernization program is ongoing, Russia appears to be limiting most of its heavy bomber activity to shorter-range flights.

6. Senator SULLIVAN. General Robinson, would you expect Russian air activity to increase again in the future?

General ROBINSON. Russia placed extra emphasis on modernizing and professionalizing its military after invading Crimea in 2014. This included Long Range Aviation forces. Russia will have the capability to increase its Long Range Aviation fleet's operational tempo once modernized bombers become operational and pilots gain proficiency on the modernized aircraft. I expect Moscow will increase their air activity when such action aligns with their strategic intent.

7. Senator SULLIVAN. General Robinson, in your opinion, are there any strategic elements that may enhance NORAD's air capabilities to include our Canadian allies given the amount of 5th Generation Combat-Coded Fighters currently in Alaska?

General ROBINSON. NORAD has several strategic strengths and capabilities that enhance our ability to defend North America. Our most significant strategic strength is the six-decade bi-national partnership with Canada that synchronizes capabilities between United States and Canadian forces and continues projecting strength against Russia or any threat to North America.

Alaska-based 5th generation fighters serve as NORAD's front-line conventional deterrent against Russia. These aircraft also provide unique operational capabilities against emerging threats, and they ensure the United States and Canada can defend against potential threats against North America.

8. Senator SULLIVAN. General Robinson, following up from question 6, what more could Canada do?

General ROBINSON. Canada has been a stalwart partner for the past 60 years and continues to stand shoulder to shoulder with the United States against threats to North America. As Russia moves to modernize some of its weapons systems, some of their capabilities are beginning to become more difficult to mitigate with some of NORAD's older equipment.

Canada is actively participating in efforts to improve the North Warning System and is also moving to recapitalize and modernize its fighter fleet. These improvements will enhance the Royal Canadian Air Force's capability to detect, track, and engage low-observable targets such as advanced cruise missiles being fielded by Russia.

BIG STRATEGIC—NORTH KOREA VS. CHINA/RUSSIA

9. Senator SULLIVAN. General Robinson, given the focus on "great power rivalry" in the NDS—and the need to defend the Homeland against these increasingly complex and diverse threats in vastly different domains—how we balance the likely need to either enhance our deterrence posture on the Peninsula against more conventional threats/post-Cold War threats with the need to rapidly innovate new systems, technology, and TTPs to deal with TWO great power rivals?

General ROBINSON. Emerging "great power" rivals to the United States are capable of attacks against North America in multiple domains, from multiple approaches, and at increasingly greater ranges. Beyond our current deterrence posture on the Peninsula to counter intercontinental ballistic missiles, USNORTHCOM is working to identify and recommend materiel and non-materiel solutions to outpace threats. This comprehensive effort analyzes each current and emerging threat through the lens of the following domains: air, maritime, cyberspace, aerospace, space, and land. Each domain is analyzed across the categories of policy, plans, command and control, organization, and materiel to determine capability gaps and develop recommended solutions.

10. Senator SULLIVAN. General Robinson, how do we go "all in on Korea without getting sucked into Korea?" as Gen. McDew said?

General ROBINSON. USNORTHCOM conducts our Homeland defense mission on a daily basis informed by and adjusted to the threats posed to the Homeland. By ensuring a dependable ballistic missile defense capability, we provide our senior leaders with decision space for diplomatic and military options. We also continue to work closely with the Joint Staff and USPACOM to ensure that adequate forces are retained in Alaska and the Continental United States to defend the Homeland.

NORTH KOREA—STRATEGY, OBJECTIVES, AND GOOD FOR CHINA?

11. Senator SULLIVAN. General Robinson, what should be the United States overall strategy to mitigate the threat to our Homeland posed by North Korea?

General ROBINSON. I believe the current whole-of-government effort to maintain pressure on North Korea is the best approach. The United States Department of State is in the lead and continues to work with the international community through diplomatic channels, while from a military standpoint, I believe we can continue to mitigate the threat to the Homeland by maintaining a robust defense-in-depth in close coordination with our allies. We work closely with USPACOM and other mission partners to maintain constant situational awareness and mitigate risks to the Homeland.

12. Senator SULLIVAN. General Robinson, beyond security for the regime, what are North Korea's strategic objectives in attaining long-range nuclear weapons?

General ROBINSON. I share the United States intelligence community's view that North Korea's strategic objective in attaining long-range nuclear weapons is to gain coercive influence over South Korea, Japan, and the United States, thus benefitting North Korean sovereignty and interests on the Korean Peninsula. I believe Kim Jong-un seeks a strategic capability that will ensure North Korea's territorial integrity and regional interests are recognized and acknowledged by the international community.

13. Senator SULLIVAN. General Robinson, is a long-range nuclear capability on the Korean Peninsula at all in China's strategic interest?

General ROBINSON. China's declared policy of a de-nuclearized Korean Peninsula matches ours, and I do not believe a North Korea in possession of long-range nuclear capability is in China's overarching strategic interest.

14. Senator SULLIVAN. General Robinson, is there any strategy for North Korea that you can think of that does NOT involve a more robust missile defense for both the United States and our allies?

General ROBINSON. As the Commander responsible for active defense of the United States, my focus is on missile defense. I am confident we can defend the United States against the current North Korea missile threat, but we must complete necessary improvements with a sense of urgency to remain in a position of relative advantage. I defer to my partner Combatant Commanders for their regional views on left-of-launch offensive capabilities, however, I appreciate the ongoing efforts throughout the Department to improve both our offensive and defensive capabilities to defeat adversary missiles.

BALLISTIC MISSILE DEFENSE

15. Senator SULLIVAN. General Robinson, given recent increases in Ballistic Missile Defense in the NDAA and the upcoming release of the Ballistic Missile Defense Review (BMDR) and/or Missile Defeat Review (MDR), what do you see as the next short term steps to solidify the United States against Ballistic Missile Threats from Rogue Nation States in the near term? What capabilities do we need?

General ROBINSON. We are working with the Missile Defense Agency to address near-term improvements to our sensors and interceptors. For sensors, there are plans to field the Long Range Discrimination Radar, Homeland Defense Radar-Pacific, and Homeland Defense Radar-Hawaii. The Missile Defense Agency continues work on the Redesigned Kill Vehicle and concept development for the Multi-Object Kill Vehicle; they are also procuring twenty additional interceptors tipped with Redesigned Kill Vehicles. In addition, we are looking at possible additional defensive layers beyond just the Ground-Based Interceptors.

16. Senator SULLIVAN. General Robinson, following up from question 14, what do you think we need in the next 5–10 years, and beyond?

General ROBINSON. In the near term, we need to improve our sensors and interceptors. In the long term, we are working with the Department to identify and prioritize space-based sensor capabilities and additional defensive "layers" against intercontinental ballistic missiles beyond Ground-Based Interceptors. I continue to support Department-level efforts to integrate left- and right-of-launch operations.

17. Senator SULLIVAN. General Robinson, as we ask our allies to do more on missile defense, how should we seek to prioritize our collaboration—what systems should our allies focus on first?

General ROBINSON. In the Pacific Region, there is opportunity to improve the sensor architecture to the mutual benefit of the United States and our allies and partners. For instance, there is currently a study initiated by the Missile Defense Agency for a Homeland Defense Radar—Pacific that could provide significant contributions to both the region and United States defense.

18. Senator SULLIVAN. General Robinson, following up from question 16, what more could Canada be doing?

General ROBINSON. Canada has currently chosen not to participate in the ballistic missile defense mission. As the Commander of NORAD and USNORTHCOM, I respect that this is the Government of Canada's decision to make and defer to their sovereignty for any future changes to their current policy.

SPACE-BASED SENSORS

19. Senator SULLIVAN. General Robinson, assuming you have non-sequestered AND threat-based budget, what specific investments in capacity and capability would you want as a warfighter to improve our Homeland missile defense and to modernize it for threats on the not-too-distant horizon? Please be specific.

General ROBINSON. We are working with the Missile Defense Agency to address near-term improvements to our sensors and interceptors. The realization of the Long Range Discrimination Radar, Homeland Defense Radar-Pacific, and Homeland Defense Radar-Hawaii are important steps to improve persistent discrimination capability. The testing and fielding of the Redesigned Kill Vehicle and development of the Multi-Object Kill Vehicle interceptors will improve reliability and lethality, with the Multi-Object Kill Vehicle being a longer-term initiative. In addition, the procurement of 20 more interceptors at the Alaska site, tipped with Redesigned Kill Vehicles, is in work to provide both additional capability and capacity. I believe we are on the right track with these planned improvements, but we will need to ensure we proceed on a pace that outpaces North Korean advancements.

20. Senator SULLIVAN. General Robinson, what is your view on a space-based sensor infrastructure that would allow us to track—from birth to death—incoming missiles that might threaten the United States Homeland, that I called for in my bill S.1196?

General ROBINSON. I support the development of space-based sensing capabilities in the long term. Space-based sensors can provide a more comprehensive capability and are less sensitive to axis of attack. However, I prioritize employing the more mature technology of terrestrial radars in the near term with a sense of urgency due to the rapid advancements and evolutions we are seeing from North Korea.

21. Senator SULLIVAN. General Robinson, what effect would a space-based sensor layer have on regional missile defenses, such as THAAD, Aegis, and Patriot?

General ROBINSON. I defer to the Missile Defense Agency and my partner geographic combatant commanders due to the regional nature of these system capabilities.

QUESTIONS SUBMITTED BY SENATOR BILL NELSON

HURRICANE RELIEF EFFORTS

22. Senator NELSON. General Robinson, this past year, the United States Northern Command worked to overcome several challenges during their response to hurricane ravaged Puerto Rico, which included opening ports and restoring power. What lessons learned did NORTHCOM take away from their role in disaster response in 2017 as it relates to Florida, Puerto Rico, and Texas?

General ROBINSON. The 2017 hurricane season presented a number of challenges due to the number and severity of the storms, the wide geographic area that was affected, and the scale of damage that resulted with significant impacts to millions of American citizens. The key lessons learned during the USNORTHCOM response in support of Federal Emergency Management Agency (FEMA) as the lead federal agency included the critical importance of pre-established relationships; combined training; and integrated planning with federal, state, and local partners.

The response to Hurricanes Harvey, Irma, and Maria further demonstrated the absolute importance of effective communication between all elements and agencies involved with the response. By deploying a Defense Coordinating Official and Element to coordinate directly with FEMA and state/territorial officials on the ground in advance of each storm's landfall, USNORTHCOM was able to anticipate pending mission assignments from FEMA officials. The need for agility and creativity was also reinforced throughout the responses as USNORTHCOM and the military Services employed appropriate authorities to pre-position assets at forward staging areas to provide a more rapid response immediately on receipt of mission assignments from FEMA.

ILLICIT OPIOID TRAFFICKING

23. Senator NELSON. Admiral Tidd and General Robinson, you are acutely aware of the opioid crisis and how it is intimately connected to our southern U.S. approaches. How are you collaborating with key interagency partners to develop an effective campaign to stop the flow of illicit opioids from reaching our coastline?

Admiral TIDD. The opioid crisis is fueled by a complex network of issues that cannot be solved by any one entity alone. In order to bring together all the disparate organizations within the United States Government that play a role in confronting this crisis, USSOUTHCOM hosted an Opioid Summit this February at our headquarters. Attendees spanned the interagency with over 125 representatives from 28 distinct organizations taking part. This first in what will be a continuing effort, gave the interagency (including USSOUTHCOM) the opportunity to develop shared understanding of the problem and to strengthen the relationships that will be needed to truly affect the criminal organizations that are involved in illicit opioid trafficking. Our Joint Interagency Task Force—South (JIATF–S) works across the interagency to gain awareness of illicit movements of opioids through the transit zone en route to the U.S., and to take action to stop those movements if they have assets available to do so. JIATF–S also works closely with JIATF–West to ensure seamless information sharing if any illicit movements enter our Joint Operating Area from Asia. Within USSOUTHCOM, we have shifted our fundamental approach to center on supporting, strengthening, and enabling the "friendly network" of U.S. Government, regional, allied, and civil society partners to work together to degrade opioid and other threat networks, disrupt their operations, and affect the underlying conditions and enablers that they rely on for success.

General ROBINSON. Along the United States southern border, we continue to support our federal law enforcement partners with military-unique capabilities that aid in the detection, monitoring, and eventual law enforcement interdiction of illegal narcotics. We also continue to leverage our military-to-military relationships with Mexico and The Bahamas, along with collaborating and sharing information with United States Southern Command, as part of a broad interagency effort to stem the flow of dangerous drugs into the United States.

24. Senator NELSON. Admiral Tidd and General Robinson, how are you working together and enhancing military cooperation with allies to counter transnational criminal networks from smuggling fentanyl from China and Mexico?

Admiral TIDD. The significance of the threat has coalesced a wide range of partners who are interested in sharing their capabilities and information to collaboratively illuminate and dismantle these nefarious networks that can move anything and have global reach. Consistent with our approach to all transregional threats, we are working with our partners at PACOM and NORTHCOM to help illuminate these networks and enable the endgame for both U.S. and partner nation law enforcement. In application and to the limit of our current resources, we seek to identify the specifics of the threat through intelligence collection and analysis, we share that information as widely as possible, and we help build the capacity of our willing partners to accomplish the needed disruption.

General ROBINSON. Along the United States southern border, we continue to support our federal law enforcement partners with military-unique capabilities that aid in the detection, monitoring, and eventual law enforcement interdiction of illegal narcotics. We also continue to leverage our military-to-military relationships with Mexico and The Bahamas, along with collaborating and sharing information with United States Southern Command, as part of a broad interagency effort to stem the flow of dangerous drugs into the United States.

VENEZUELA

25. Senator NELSON. Admiral Tidd, what is your assessment of the situation in Venezuela? In particular, how best can the United States target the criminal dictator Maduro, and help restore Venezuela's democracy?

Admiral TIDD. Venezuela is facing an unprecedented socioeconomic crisis. Venezuela has the world's highest inflation rate (near 2,400 percent in 2017), with IMF experts forecasting it will be above 13,000 percent in 2018. Oil output was down 29 percent in 2017. The population is experiencing serious shortages of food, medicine, and basic goods. These financial shortfalls and dwindling oil revenues coupled with extreme debt are creating a political and economic crisis with humanitarian consequences driving migration out of the country. As many as 5 percent of the population have already deserted the country, and estimates are that another 5 percent could leave in 2018. Key partners like Colombia and Brazil are increasingly concerned about this migration, with numbers exceeding 550,000 Venezuelans entering Colombia. We continue to closely monitor this deteriorating situation and engage our partners regularly as to how they are being impacted by the humanitarian crisis generated by the Maduro Administration. Clearly, a crisis of this magnitude requires an international diplomatic solution, which the Department of State is lead-

ing. For questions on restoring democracy in Venezuela, I would refer you to the Department of State.

MILITARY HOUSING IN SOUTH FLORIDA

26. Senator NELSON. Admiral Tidd, currently, the Housing Services Office, who assist eligible personnel and families in finding adequate affordable housing while assigned to active duty in South Florida, is operating with limited inventory and resources. What can Congress do to find affordable community oriented housing for our service members and their families?

Admiral TIDD. There are significant challenges to finding adequate affordable housing for our service members in the Miami area. We are a small population in a large, high-cost metropolitan area and have little market influence. The area that drives housing allowance rates is a large two-county area, while much of the housing available within a reasonable commute of our headquarters in Doral is high-cost. This forces our service members to the outer edges of, or beyond a 20-mile / 60-minute commute. Our housing office is working hard, in collaboration with the U.S. Coast Guard and within department policy, to shape housing allowance rates to make our service members more competitive in areas closer to our installation. We have also had some successes with state legislation to counter some challenging local market practices like long community association approval processes for renters and 3 months' rent up front (first and last month, and a security deposit).

For a longer term solution to this problem, SOUTHCOM is actively working with the Army at all levels on a proposal to acquire land and construct a limited amount of military housing closer to our installation in Doral that would do much to economically address the problem, particularly for our most junior members. The military housing would enhance quality of life and security for our young service members and their families, and reduce the operational risk we presently incur by having our military work force spread across a large metropolitan area.

We appreciate your concern for our forces and will keep Congress informed as we develop this housing project.

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

EXPEDITIONARY FAST TRANSPORT SHIPS

27. Senator SHAHEEN. Admiral Tidd, in a recent memo the Secretary of the Navy (SECNAV) identified the need for additional ships in the U.S. Southern Command (USSOUTHCOM) region to stem the flow of drugs and defeat human trafficking. As part of the U.S. Navy's assessment, they reportedly determined that Littoral Combat Ship (LCS) and Expeditionary Fast Transport (EPF) ships provided the best support to meet USSOUTHCOM's requirements. Does USSOUTHCOM plan to meet the intent of the SECNAV memo?

Admiral TIDD. USSOUTHCOM fully endorses the observation made within the SECNAV memo, as we do not have at our disposal the ships necessary to counter the threat. We at SOUTHCOM, like all other Combatant Commanders, submit our force requirements, to include the number and type of ships we need to execute our assigned missions, to the Joint Staff. We are then dependent on the Navy, as DOD's maritime force provider, to allocate to us the ships that would satisfy our requirements. We welcome any support that Congress can offer to the Navy which would enable them to meet the intent of SECNAV memo. In order to mitigate the current shortfall in surface assets, we included a request to fund a contract Multi-Mission Support Vessel (MMSV) as part of our Unfunded Priority List submission to Congress this year.

28. Senator SHAHEEN. Admiral Tidd, how many vessels would USSOUTHCOM need in order to meet the intent of the memo?

Admiral TIDD. An allocation of an additional four vessels, as mentioned in the memo, will meet the intent of the memo which is to restore presence of Navy ships in the JIATFS operations area. Since fiscal year 2015, the presence of Navy medium and long range ships supporting JIATFS has been, at best, sporadic. Currently, there are no Navy medium and long range ships allocated to USSOUTHCOM to support JIATF–S operations.

29. Senator SHAHEEN. Admiral Tidd, if EPFs are chosen as the vessel to meet the intent of the memo, how many EPFs would be needed?

Admiral TIDD. In the absence of sufficient Littoral Combat Ship (LCS) availability, and until modifications to the EPF class make them a more capable platform

from which to conduct JIATF–S operations (i.e. improved small boat launch and recovery, hull strengthening, improved communications suite, increases in platform reliability etc), USSOUTHCOM would prefer a mix of LCS and EPF ships, instead of EPF only to meet the intent of the memo.

30. Senator SHAHEEN. Admiral Tidd, if EPFs are chosen as the vessel to meet the intent of the memo, when would they deploy to the USSOUTHCOM Area of Responsibility (AOR)?

Admiral TIDD. As the DOD maritime force provider, that would be the Navy's decision.

QUESTIONS SUBMITTED BY SENATOR RICHARD BLUMENTHAL

PUERTO RICO

31. Senator BLUMENTHAL. General Robinson, in the CR passed earlier this month, DOD received over $1.8 billion for hurricane damage to cover operation and maintenance costs, military construction efforts, Army Corps of Engineers projects, and more. Do you believe this is sufficient? How is this funding being used to rebuild response capacity and capability?

General ROBINSON. While USNORTHCOM was responsible for synchronizing DOD efforts in support of Department of Homeland Security-generated requirements during the response phase of this hurricane season, the military Services retain the authority and responsibility for managing their operations and maintenance, military construction efforts, and U.S. Army Corps of Engineers projects. As such, I defer to the military Services regarding the sufficiency or ultimate use of the funds appropriated during the CR.

GENDER ADVISOR

32. Senator BLUMENTHAL. Admiral Tidd, can you expand on the importance of women, peace, and security issues as it pertains to the military? How has having a senior-level gender advisor that reports directly to you improved your command's ability to be a more effective fighting force?

Admiral TIDD. From illicit trafficking to armed violence to insecurity, women often unduly bear the burden of many of the challenges our military and security forces are trying to address. In conflict, the civilian population—generally women and children—becomes subject to atrocities such as Gender Based Violence and Human Trafficking. By integrating a gender perspective into our institutions and into our policies before conflict breaks out, we give ourselves the opportunity to hear from a broader range of voices that together, will help us find solutions that could prevent or mitigate the worst of the violence. When women in conflict countries are engaged by the militaries, we get better intelligence and raise the operational effectiveness of our troops. We know that when we involve women in our societies, systems, and processes, our countries are stronger and have more lasting peace with a lower risk of armed conflict.

We do not aim to lecture our partners on the importance of gender integration in the military, rather we always look to model this behavior. It sends a strong message to our partner militaries when they see the SOUTHCOM Gender Advisor, a female Master Chief Petty Officer (who coincidentally is from Connecticut), arrive in their countries as part of a senior NCO subject matter expert exchange. As she introduces herself, our counterparts learn that in her 24 years of service she has been part of Special Forces cultural support teams in Afghanistan and Iraq. Showing that the United States has women successfully serving in these operational roles is key to emphasizing the imperative of gender integration in our partner nation militaries.

USSOUTHCOM also hosts an annual Women in Military and Security Forces Conference that brings together senior defense officials from across the region to discuss their own lessons learned about gender integration in the military. This puts a partner nation face on these discussions and with a goal of shifting the region's attitude toward women in the military and opening all military positions to women.

33. Senator BLUMENTHAL. Admiral Tidd, have you engaged your fellow combatant commanders on how they focus on women, peace, and security issues?

Admiral TIDD. I have very publically been promoting our four Military Imperatives—respect for human rights, the institutionalization of jointness, development of professional non-commissioned officer (NCO) corps, and integration of effective gender perspectives—as fundamental core military competencies required for

professionalization of regional militaries. These competencies strengthen the operational effectiveness, cohesion, and capabilities of our hemisphere's forces. In discussing this at various forums and with various audiences to include Congress and NATO, I have shared our efforts on gender integration and women, peace, and security with fellow combatant commanders and other senior leaders across the national security arena.

QUESTIONS SUBMITTED BY SENATOR MARTIN HEINRICH

DRUG INTERDICTION

34. Senator HEINRICH. Admiral Tidd and General Robinson, I was pleased to hear that you and your team set an interdiction record by stopping 283 metric tons of cocaine from entering the United States. I'm concerned, however, that a significant amount of cocaine [800 metric tons] still goes unchecked due to a lack of maritime interdiction assets. Would you say that the vast majority of cocaine entering our country comes by sea?

Admiral TIDD. Yes, Senator. In fiscal year 2017, 98 percent of cocaine moved toward the U.S. by sea and two percent by air. Of that 98 percent that started its journey by sea, the vast majority made landfall in Central America and Mexico where it was broken into smaller loads and continued toward the United States by land.

In fiscal year 2017, JIATF–South knew exactly where 1,167 events were at some point in their movement and were unable to take action against them due to a lack of assets. Those illicit events contained 815 metric tons of cocaine, which would potentially result in:

- 4,890–8,965 U.S. Cocaine-Related Drug Overdose Deaths
- 450,000–835,000 U.S. Cocaine-Related Emergency Room Visits ($978 million–$1.8 billion)
- 5.0 million–9.3 million New U.S. Cocaine Users
- 62,755 U.S. Drug-Related Offenders
- $1.9 billion Additional U.S. Cost of Inmate Care in Federal Prisons
- 30,970 Violent Murders in Mexico and Central America
- $8.2 billion–$16.3 billion Illicit Profits (fueling corruption and instability)
- 2,575 detainees (would provide additional information on the illicit networks moving these drugs)

General ROBINSON. The Drug Enforcement Administration's 2017 National Drug Threat Assessment indicates the majority of cocaine enters the United States country by sea.

35. Senator HEINRICH. Admiral Tidd and General Robinson, other drugs including illicit fentanyl, one of the main overdose deaths in the United States, are smuggled via legal ports of entry, not walked across gaps on our border. Are there other assets that you believe would be more helpful in allowing you to protect our nation from illicit trafficking of drugs? What kind of assets?

Admiral TIDD. To stop drugs from entering the country, we require force packages that include Maritime Patrol Aircraft (MPA) and surface assets. For every force package we have, we can stop approximately 31 metric tons or 36 illicit events annually. MPA are the top priority within the force package as they provides more geoprecision location information which greatly increases detection and subsequent interdictions of illicit conveyances. Without MPA to vector partner nations to illicit targets, those very willing partners will typically not launch an interdiction asset because they are very rarely successful finding an illicit target unassisted—that would be an inefficient use of their extremely limited operational funding and capability. Additional interdictions are made possible by a vertically integrated force package which includes medium to high endurance ships with a helo embarked (authorized to use force) and over-the-horizon RHIBs. The synergistic effect of this package greatly exceeds the capability of any individual single asset. MPA enable both U.S. and partner nation interdiction and apprehension asset successes.

JIATFS Annual Requirements:

- Air = 90,000 flight hours per year; in fiscal year 2017 sourced at 20 percent of requirement (18,200 flight hours)
  - o DOD provides ~8 percent of these hours
  - o The majority is provided by Department of Homeland Security (DHS; CBP and USCG) and Allied and Partner Nations
- Ships = 12,500 ship days per year; in fiscal year 2017 sourced at 31 percent of requirement (3,840 ship days)

- o DOD provides ~9 percent
- o Majority provided by DHS (USCG) and Allied Nations

General ROBINSON. We support our partners with military-unique capabilities that are balanced against the Department's global requirements and within the resources provided by our authorities and appropriations. Our support of the risk-based Southern Border and Approaches Campaign Plan from the Department of Homeland Security has proven to be quite beneficial by focusing these resources where intelligence, surveillance, and technology indicate the greatest area of threat and, hence, the greatest potential benefit.

36. Senator HEINRICH. Admiral Tidd and General Robinson, given the limited budget and resources at your disposal, would prioritizing the construction of a wall on our southern border meaningfully reduce the flow of drugs entering the country versus the allocation of those same resources towards other interdiction efforts?

Admiral TIDD. USSOUTHCOM cannot speak to the interdiction efforts at the Southern Border, as that is not within our theater of operations. What I can tell you is that when we do have the requested maritime force packages available to us we are extremely efficient at stopping large loads of drugs on the high seas before they hit land and get broken down into smaller batches that are much harder to interdict.

General ROBINSON. USNORTHCOM conducts Counternarcotic and Counter Transnational Organized Crime efforts in support of law enforcement agency and Department of Homeland Security (DHS) partners. While technologies that enhance surveillance and interdiction capability could be beneficial, I defer to DHS as the lead federal agency for specific requirements.

INFORMATION OPERATIONS

37. Senator HEINRICH. Admiral Tidd, during your posture statement, you discussed Russian efforts to influence the information environment in Latin America, including Russia operating two Spanish language TV networks. Russia continues to see results from their overseas disinformation campaigns designed to undermine United States interests in locations where our armed forces are stationed or operating. What are you doing in SOUTHCOM to counter these efforts by the Russians and other adversaries who are trying to degrade American influence in the region?

Admiral TIDD. We are educating and informing our partners on the potentially detrimental and destabilizing effects of Russian activity, especially Moscow's increased use of active measures and disinformation in South and Central America, namely through Russia Today and Sputnik Mundo. We are also working to promote the positive benefits of U.S. partnership and highlight our continued commitment to the region. As I told this Committee in 2017, we lose relationships not as a result of any Chinese or Russian actions; we lose them, in large part, by not demonstrating the depth of our commitment to the region. Success or failure in this region depends on us, what we stand for, and what we do, much more than it depends on anyone else.

38. Senator HEINRICH. Admiral Tidd, do you believe you have the necessary authorities and resources to counter the Russian narrative?

Admiral TIDD. One of the best ways to counter the Russian narrative is to demonstrate, by deed, that the United States is a strong partner in this hemisphere. To do that, we must maintain persistent presence and be actively engaged as a visible, ubiquitous security partner. For the most part, the countries in this region want to work with the U.S., however, limited resources sometimes restrict our ability to do so.

It is important to take a transregional/global approach to this problem set; while expanded support to the Global Engagement Center to counter Russian propaganda is extremely helpful, we should not focus our efforts exclusively in Europe. I believe a broader, more integrated approach is needed to address this destabilizing Russian narrative globally, wherever it may be taking place. That means in Latin America and the Caribbean, as well as in Europe.

COUNTER UAV AT DOMESTIC MILITARY INSTALLATIONS

39. Senator HEINRICH. General Robinson, you said that the potential threat from airborne platforms with small radar signatures will become commonplace in the coming years and that they have the potential to hold our vital institutions and infrastructure at risk. This committee gave you authority in section 1692 of the last NDAA to engage unmanned aircraft systems that threaten our military installations

or other strategic assets. Do you believe you now have the authority to better address this threat? What about resources?

I encourage you and the Department to look at innovative solutions like Directed Energy to address this problem.

General ROBINSON. The Fiscal Year 2018 National Defense Authorization Act provided expanded authorities to better address the threat of airborne platforms with small radar signatures. These authorities allow installation commanders to engage potential threat platforms as they approach and overfly sensitive military bases.

The counter-unmanned aerial systems mission is largely executed by the Services and appropriate interagency partners, although NORAD and USNORTHCOM have equities in both force protection (a USNORTHCOM mission) and air domain defense (a NORAD mission), which makes detecting small radar signature airborne platforms one of my top priorities.

Timely detection of an unmanned aerial system is the first step in engagement sequence and critical to providing sufficient warning time for successful engagement. Advanced sensors are necessary to detect low-radar cross section threats such as advanced cruise missiles and small unmanned aerial systems. As small unmanned aerial system technology becomes more advanced, I will continue to support Department efforts to develop defensive systems to better protect our installations and personnel to operate these systems.

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, FEBRUARY 27, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

UNITED STATES CYBER COMMAND

The committee met, pursuant to notice, at 9:30 a.m. in Room SH–216, Hart Senate Office Building, Senator James M. Inhofe presiding.

Committee members present: Senators Inhofe, Wicker, Fischer, Ernst, Tillis, Perdue, Sasse, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. The committee meets today to hear Admiral Mike Rogers—you know, you have more titles than anybody else down here, you really do—as the Commander of the——

Admiral ROGERS. I have that going for me, sir.

Senator INHOFE.—Commander of the U.S. Cyber Command, Director of the National Security Agency, and Chief of the Central Security Service. Given your upcoming retirement, it might be this is the last time you'll be dropping in. Is—do you think that will happen? We'll miss you.

Well, the—as the recent National Defense Strategy identified renewed great power and competition with Russia and China—and that kind of stands—goes along with what General Dunford said when he said that we are losing our qualitative and quantitative edge as we move into this 2032—or, this 2023 National Defense Strategy. As we approach the eighth anniversary of Cyber Command, we should recognize the remarkable progress you've made in taking what was a very niche warfighting concept and establishing around it a full-fledged warfighting command. Later this year, we anticipate that you will achieve full operational capability of—for the 6,200-person Cyber Mission Force.

Despite the many successes, there are still significant challenges. The committee remains concerned about a hollow cyber force due to the lack of priority across the Services to deliver the required tools and capabilities and personnel. Efforts have improved, but the

fact remains that we have not—are not where we need to be, and that we lack the bench strength necessary.

The other area—and then I'll have some questions about this during our question time—is the fact that we're at—I think, at somewhat of a disadvantage with responsibilities that are spread, as I mentioned to you a few minutes ago, across DOD [Department of Defense], DHS [Department of Homeland Security], and the FBI [Federal Bureau of Investigation], with little semblance of coordination. We can't just wait for a major cyberattack and then try to get this thing right. If we look at some of the other countries, that they have got this more centralized and coordinated. So, we need to address that to see if maybe we've got some improvements that we can make structurally.

Senator Reed?

STATEMENT OF SENATOR JACK REED

Senator REED. Well, thank you very much, Mr. Chairman.

Admiral Rogers, welcome. Since we are holding the confirmation hearing for your successor later this week, this is likely your last appearance before the committee. Let me thank you for decades of service to the country, to the NSA [National Security Administration] and Cyber Command. You've done an extraordinary job. Thank you, sir.

One of the great threats facing our democracy is influence operations, a type of information warfare which are mostly conducted through cyberspace, the domain and theater of operations of Cyber Command. Russia engaged in a sophisticated influence campaign during the 2016 election cycle. China has been engaged in information operations against their own citizens in order to control their access to information and their behavior, and is becoming more active abroad. They have also engaged in massive theft of intellectual property conducted against United States companies for their own economic gain. North Korea's attack on Sony America was an attempt to silence an entertainment company from exercising its right to free speech and thereby send a message across the world. These efforts by our adversaries highlight some of our vulnerabilities in this area, which I hope you will address today.

While our adversaries are freely conducting information operations, Cyber Command is still predominantly designed to conduct technical operations to either defend or attack computer systems, to sustain or impede the function of computers and networks. It is not built to deal with the content of the information flowing through cyberspace with the cognitive dimension of information warfare. Cyber Command has made important strides in the last year in the cognitive dimension in the struggle against ISIS [Islamic State of Iraq and Syria], but still has a long way to go, and must also focus on the strategic level of engagement, not merely an operational tactical support to engage forces.

Other organizations and officials in the Defense Department are responsible for what the Department calls "psychological and deception operations." But, those officials and departments, in turn, have no expertise or capabilities in the technical aspects of cyberspace operations. This is a serious handicap when we are confronted with adversaries, like Russia, that conduct information

warfare that combines the technical and cognitive dimensions to manipulate perceptions through cyberspace. Because we have separated these things organizationally and in terms of policy and strategy, we are greatly disadvantaged when it comes to countering an adversary's integrated operations and when it comes to conducting our own information operations through cyberspace.

The Fiscal Year 2018 NDAA [National Defense Authorization Act] included a provision, cosponsored by Senator McCain and myself, which directs the Secretary of Defense to designate a senior official to lead the integration of all Defense Department components and capabilities that contribute to information warfare, and to develop specific strategies, plans, and capabilities to operate effectively in this arena to counter and deter adversaries. I'm eager to learn how Cyber Command is responding to this legislation.

As stressed in the newly released National Defense Strategy, Russia and other adversaries have mastered the art of conducting a systematic aggression against the United States and its interests and allies by staying just below the level that would be considered armed aggression or an act of war. As the DNI [Department of National Intelligence] testified recently to the Senate Intelligence Committee, adversaries are using cyber operations to achieve strategic objectives, and will continue to do so unless they face clear repercussions. Adversaries are achieving strategic effects incrementally by applying constant pressure through cyberspace against the sources of our national power.

In addition to tools such as sanctions, diplomacy, indictments, and public shaming, we must meet not only Russia, but all adversaries, where the struggle is taking place in the information sphere. As part of this, we need to engage in blunt information operations against us at their source by disrupting them in cyberspace as they unfold.

The National Mission Teams of the Cyber Mission Force were created to conduct exactly these missions. According to Defense Department's official cyberstrategy, the National Mission Teams were created to defend the country by disrupting ongoing cyberattacks of "significant consequence." Some of these influence operations in cyberspace are directed against the foundations of American democracy: the free expression of Americans' political views, the voting booth, and through our political parties and campaign organizations. Surely, such acts meet the threshold of "significant consequences," justifying the use of the National Mission Teams under the Defense Department's cyberstrategy.

The members of the Cyber Subcommittee, led by Senators Round and Senator Nelson, have made this point numerous times. I want to thank them for their leadership on the issue. Admiral Rogers, I'm also interested in your views on this issue.

Finally, I understand that presidential leadership is critical on these issues. I raised this matter with the Director of National Intelligence and each of the intelligence agency directors, including you, Admiral Rogers, at a recent public hearing of the Intelligence Committee. The very disappointing answer that I received is that the President has not corrected any action on countering these threats. In addition, countering these threats requires not only the Defense Department to integrate all the components of information

warfare, it is essential to integrate capabilities and authorities of all the national security and law enforcement organizations across the government as a whole. This, too, requires leadership that, so far, has been lacking.

Admiral Rogers, thank you again for your service and the service of your family, and I look forward to your testimony.

Senator INHOFE. Thank you, Senator Reed.

I, regretfully, say that Senator Rounds, who does chair the Subcommittee, will not be here today, or actually this week, with the loss of his father.

Senator REED. Oh. Sorry.

Senator INHOFE. So, we all regret that.

Admiral Rogers?

STATEMENT OF ADMIRAL MICHAEL S. ROGERS, USN, COMMANDER, UNITED STATES CYBER COMMAND; DIRECTOR, NATIONAL SECURITY AGENCY; AND CHIEF, CENTRAL SECURITY SERVICES

Admiral ROGERS. Thank you, sir.

Chairman Inhofe, Ranking Member Reed, and distinguished members of the committee, thank you for your enduring support and the opportunity to talk with you today about the hard-working men and women of United States Cyber Command.

But, first, I'd like to take a moment to extend our thoughts and prayers to Chairman McCain and his family, and to voice our support for him as he undertakes this tough health fight. Senator McCain, keep fighting. Look forward to you getting back, sir.

On behalf of the men and women of the United States Cyber Command, I'm here to discuss the Command's posture and describe how we prepare for and execute operations in the cyberspace domain to support the Nation's defense against increasingly sophisticated and capable adversaries.

The cyberspace domain that existed when we first established Cyber Command, nearly—over 8 years ago, has evolved dramatically. Today, we face threats that have increased in sophistication, magnitude, intensity, volume, and velocity, threatening our vital national security interests and economic well-being. China and Russia, whom we see as peer or near-peer competitors in cyberspace, remain our greatest concern. But, rogue regimes, like Iran and North Korea have growing capabilities and are using aggressive methods to conduct malicious cyberspace activities.

Further, several states have mounted sustained campaigns against our cleared defense contractors to scout and steal key enabling technologies, capabilities, and systems. Our adversaries have grown more emboldened, conducting increasingly aggressive activities to extend their influence without fear of significant consequence. We must change our approaches and responses here if we are to change this dynamic.

While the domain has evolved, Cyber Command's three missions areas endure. Our first priority is the defense of the Department of Defense Information Network, or the DODIN. Second, we enable other joint force commanders by delivering effects in and through cyberspace. Finally, we defend the Nation against cyberthreats through support to DHS and others when directed to do so by the

President or the Secretary of Defense. In concert with the National Defense Strategy, we are charting a path to achieve and sustain cyberspace superiority, to deliver strategic and operational advantage and increased options for combatant commanders and policymakers. Without cyberspace superiority in today's battlefield, risk to mission increases across all domains and endangers our security.

Since my last update almost a year ago, Cyber Command has achieved a number of significant milestones. First, Joint Force Headquarters DODIN, our subordinate headquarters responsible for securing, operating, and defending the Department's complex IT [Information Technology] infrastructure, has achieved full operational capability. Second, Joint Task Force Ares, the organization we created to lead the fight in cyber against ISIS, has successfully integrated cyberspace operations into that broader military campaign, and achieved some excellent results. We will continue to pursue ISIS in support of the Nation's objectives. Third, we've significantly enhanced our training and cyber operation platforms to prepare the battlespace against our key adversaries.

This year will bring several additional accomplishments. Cyber Command will be elevated to a unified combatant commander when I step down, later this spring. As a combatant command, we will have the unique responsibilities of being a joint force provider and a joint force trainer responsible for providing mission-ready cyberspace operations forces to other combatant commanders and ensuring that joint cyberforces are trained to a high standard and remain interoperable.

In addition, in April, we'll start moving into a state-of-the-art integrated cyber center and joint operations facility at Fort Meade. This will be our first fully integrated operations center that enhances the whole-of-government coordination and improves planning and operations against a range of growing cyberthreats.

Within this dynamic domain, it's imperative to continually evolve the training and tools of our operators. We've recently delivered the first of several foundational toolkits designed to enable the Cyber Mission Force to work against adversary networks while reducing the risk of exposure, as well as equipping JTF [Joint Task Force] Ares in its fight against ISIS with capabilities designed to disrupt adversary use of the Internet.

Innovation and rapid tech development demand competition and the ability to leverage all partners, including small businesses. We intend, in the coming year, to create an unclassified collaboration venue where businesses and academia can help us tackle tough problems without needing to jump over clearance hurdles, for example, which, for many, are very difficult barriers. Of course, all these tools require a talented and sophisticated workforce to operate and employ them. The Cyber Excepted Service will help us recruit, manage, and retain cyber expertise in a highly competitive talent market.

Our success also remains entwined with continued integration of the Reserve and National Guard. In our headquarters alone, we currently employ more than 300 full-time and part-time reservists, and, in addition, more than 150 Reserve and National Guard members are mobilized to lead and execute cyberspace operations. For most—perhaps most significantly, we are nearing completion of the

buildout of our Cyber Mission Force, with all teams on a glide path to reach full operational capability before the end of this fiscal year. As the teams reach FOC [full operational capability], our focus is shifting beyond the build to ensuring that those teams are ready to perform their mission and to execute sustained and optimized mission outcomes for the Nation year after year for a sustained effort over time.

I fully realize that cybersecurity is a national security issue that requires a whole-of-government approach that brings together not only government, departments, agencies, but also the private sector and our international partners. Over the last year, we've also increased our interaction with critical infrastructure elements within the private sector and the broader set of U.S. Government partners supporting them.

As you know, I serve as both Commander of the United States Cyber Command and Director of the National Security Agency. This dual-hat appointment underpins the close relationship between these two organizations. The Fiscal Year 2017 National Defense Authorization Act included a provision that describes the conditions for splitting or ending the dual-hat arrangement, and the Department is working its way through this question; and ultimately the Secretary, in conjunction with the DNI, will provide a final recommendation to the President. All of us at Cyber Command are proud of the roles we play in our Nation's cyber efforts and are motivated to accomplish our assigned missions overseen by the Congress, particularly this committee.

Finally, after serving over 4 years as the Commander of Cyber Command, and after nearly 37 years of service as a naval officer, I'm set to retire later this spring, and I will do all I can during the intervening period to ensure the mission continues, that our men and women remain ever motivated, and that we have a smooth transition. I'm grateful for the committee's continued support and confidence of myself and the Cyber Command team, and I look forward to answering your questions today.

[The prepared statement of Admiral Rogers follows:]

PREPARED STATEMENT BY ADMIRAL MICHAEL S. ROGERS

Chairman McCain, Ranking Member Reed, and distinguished members of the Committee, thank you very much for inviting me before you today to represent the men and women of U.S. Cyber Command (USCYBERCOM). I am honored to lead this fine group of Americans, and to speak in public about their accomplishments—which we owe in no small part to the support of the Congress and of this committee in particular. I expect this will be my last time that I speak to you about their efforts and their progress as the Commander of USCYBERCOM, which is on the verge of becoming a full, unified combatant command, and so I am eager to begin and to answer any questions or address any concerns that you might have. I look forward to a dialogue with you about what we are seeing in cyberspace and what that means for our command, for the Department of Defense, and for our nation.

United States Cyber Command's mission is to direct, synchronize, and coordinate cyberspace planning and operations to defend and advance national interests in collaboration with domestic and international partners. We have three mission objectives: to ensure DOD mission assurance by directing the operation and defense of the Department of Defense's information networks (what we call the DODIN); to deter or defeat strategic threats to U.S. interests and infrastructure; and to achieve Joint Force commander objectives in and through cyberspace. The Command is based at Fort Meade, Maryland, and in this fiscal year is executing more than $600 million dollars in programs and projects. Our full-time staff amounts to 1,060 military members and civilians, plus contractors. At the end of December, we had 5,070

servicemembers and civilians in our Cyber Mission Force (CMF), building to a total of 6,187 people, meaning the CMF was staffed at 82 percent.

Our team is organized into components that together represent all the Armed Services. Officers and enlisted personnel come from each one of the Armed Services, and are organized, trained, and equipped by our Service cyber components in Army Cyber Command, Marine Forces Cyberspace Command, Fleet Cyber Command/Tenth Fleet, and Air Forces Cyber/24th Air Force (as well as U.S. Coast Guard Cyber). USCYBERCOM proper comprises a headquarters organization and runs operations through its components: the Cyber National Mission Force (CNMF), Joint Force Headquarters-DODIN, plus four other Joint Force headquarters elements, each of which is paired with one of the four Services' cyber components named above. Both Active Duty and Reserve Component personnel serve in our forces, and they are joined by Coast Guardsmen as well.

USCYBERCOM performs its missions in accordance with national and Department-wide strategic guidance. In elevating USCYBERCOM to unified combatant command status, the President and the Secretary of Defense made several stipulations about its mission and duties, and I shall say more about those in a moment. I hope to impart to you today my sense of the unique value that our Command, acting within these parameters, adds to the defense of America and its interests. But first I want to give you a sense of the operating environment before us and the gravity of several current and looming cyber threats.

THE CYBERSPACE ENVIRONMENT

We face a growing variety of threats from adversaries acting with precision and boldness, and often with stealth. U.S. Cyber Command engages with adversaries in cyberspace every day. Accordingly, we have developed substantial knowledge of how malicious cyber actors work against the United States, our allies and partners, and many other targets as well. That knowledge in turn provides insights into the motivations, capabilities, and intentions of those who sponsor such activities, whether they be states, criminal enterprises, or violent extremists. Cyberspace is a global and dynamic operating environment, with unique challenges.

A significant story in cyberspace over the past year relates to the progress made against the Islamic State in Iraq and Syria (ISIS), and USCYBERCOM contributions to the eviction of ISIS fighters from their geographic strongholds. Today, ISIS's so-called "Caliphate" is crumbling. It has lost 98 percent of the territory it once controlled in Iraq and Syria, and approximately 3.2 million Syrians and 4.5 million Iraqis now have a pathway to begin to rebuild their cities and their lives. Denying sanctuary to ISIS in Iraq and Syria is a victory for civilization, and an important step in stabilizing the nations of that region and building peace in the Middle East. Cyberspace operations played an important role in this campaign, with USCYBERCOM supporting the successful offensive by U.S. Central Command (USCENTCOM), U.S. Special Operations Command (USSOCOM), and our Coalition partners. We learned a great deal in performing those missions, and continue to execute some today. Mounting cyber operations against ISIS helped us re-learn and reinforce important lessons learned over the last decade of cyber operations against violent extremists. I should emphasize that this campaign was a Coalition fight, with key international partners conducting and supporting both kinetic and cyberspace operations against ISIS.

The near defeat of ISIS in its geographic strongholds is bringing to a close one chapter in an enduring campaign against violent extremists, but is not the end of the story. While ISIS has lost much of its geographic base in Iraq and Syria, we believe its leaders and die-hard adherents planned for this development. To be clear, the reduction of kinetic combat operations does not mean we have achieved the enduring defeat of ISIS. Without continued attention and support, we risk the return of violent extremist groups like ISIS in liberated areas in Iraq and Syria and their spread in new locations. As the Coalition has made progress in Iraq and Syria, many ISIS fighters, including thousands and potentially tens of thousands of foreign fighters, have fled the battlefield in Iraq and Syria. These members have dispersed to locations around the globe including Africa, Europe, Asia, and other nations in the Middle East, in many cases to reinforce other ISIS branches and affiliates. Carrying their poisonous ideology and experiences with them, they are assimilating into local populations, developing new local and online networks, and overwhelming law enforcement's ability to monitor all of these potential threats our partners' Homelands, and potentially our own.

Over the last few years, ISIS fighters and sympathizers have complicated the picture in Afghanistan, frustrating the central government's efforts to bring order and development to that war-torn land. We have watched and opposed their emergence

on the battlefield and in cyberspace, and noted their conflicts with the government in Kabul and other insurgent groups. The Afghan area of hostilities represents another important operating area for cyberspace operations. USCYBERCOM is in the fight there as well, employing cyberspace operations to protect Coalition forces, target terrorist leaders, and disrupt the operations of hostile forces. We are providing similar support to our forces battling other violent extremist groups in Africa and Asia.

We believe we may also face a further evolution of the cyberspace threat from violent extremist elements. Since its inception, ISIS leaders and their technical experts have maintained a robust online presence, and we assess that they will seek to increase their efforts in and through cyberspace. They and other groups, such as al Qaeda and its affiliates, still use the Internet to market their versions of terrorism, garner financial and material support, and inspire followers. ISIS, like al Qaeda before it, has worked hard to target susceptible individuals and inspire them to commit attacks in the West. That is why USCYBERCOM works with law enforcement, intelligence, and liaison partners to find and destroy the key nodes in ISIS online infrastructure and media operations (along with the analogous infrastructures of other violent extremists).

Our greatest concern, of course, remains that of actions by state-sponsored malicious cyber actors and the states behind them. We find that many states now seek to integrate cyberspace operations with the plans and capabilities of their traditional military capabilities. Indeed, several have mounted sustained campaigns to scout and access our key enabling technologies, capabilities, platforms and systems as they are developed and produced by cleared defense contractors. As the Secretary's new National Defense Strategy emphasizes, the states of greatest concern are Russia and China, with their advanced technological bases, powerful conventional forces, and nuclear arsenals. We watch them not just because they are big and well-armed, but because they practice coercive diplomacy against their neighbors, and their strategic intentions remain unclear. These two nations also count as peer or near-peer competitors in cyberspace.

China has shown a worrying tendency to challenge the existing rules-based order, from which it has been a major beneficiary. It is pursuing its economic and diplomatic interests with greater assertiveness, rejecting, ignoring, or trying to rewrite norms that it perceives do not trend in its favor. China's behavior in cyberspace exemplifies this trend. For example, Presidents Obama and Xi committed in 2015 that our two countries would not conduct or knowingly support cyber-enabled theft of intellectual property for commercial gain. Subsequent evidence, however, suggests that hackers based in China sustained cyber espionage that exploited the business secrets and intellectual property of American businesses, universities, and defense industries. The Justice Department just last fall unsealed indictments against three Chinese nationals, alleging they exfiltrated more than 400GB of data from several companies in the United States. In addition, the Chinese Government could exploit the production of information and technology products to harvest corporate, government, and even personal data from foreign countries.

Russia represents a different sort of problem in cyberspace. Moscow says it wants to defend the existing rules-based order, yet in fact undermines it. The Intelligence Community concluded last year that Russian actors, with the knowledge of senior decision-makers, employed influence operations to interfere with the United States presidential election in 2016. In recent months, Congress has heard testimony from leading social-media companies explaining that their business records had logged an even wider pattern of Russian cyber meddling before the election—one that matched malicious cyber activities seen by several other nations. The Kremlin has used hackers to steal personal communications that Russian operatives then parceled out in targeted leaks, and created fake social media personas and news items on all sides of controversial issues in the hope of stirring discord in the West. The idea is to make Western electorates distrust all news outlets and ultimately one another. This threatens the foundations of democracy, making it difficult to discern Moscow's intentions and to craft common measures for countering Russia's aggressive actions in its near-abroad and its repression at home.

Russian-sponsored malicious cyber activities of concern to the United States and its allies extend well beyond the behavior cited above. Russian intelligence agencies run their own cyber theft campaigns—witness last November's plea bargain of a foreign hacker who admitted to working on behalf of one of Moscow's intelligence services, wherein he hacked the webmail accounts of individuals of interest to Russia and sold their passwords to his Russian handlers.

We are monitoring the cyber conflict sparked by the ongoing Russian-manufactured conflict in Ukraine. Secretary Mattis in Kyiv noted that Russia is not adhering to the letter or the spirit of its treaty commitments, most egregiously by at-

tempting to change international borders by force. This behavior in geographic space matches Russian cyberspace behavior; Russia's cyber actions seem designed to complement and support its aggressive actions on the ground. While we cannot discuss the details in open session, I would draw your attention to the spate of very serious cyber attacks against Ukrainian citizens and infrastructure over the last 16 months. For instance, the National Cybersecurity and Communications Integration Center (NCCIC) of the Department of Homeland Security issued an alert in July to public utilities concerning a new malware that targeted electrical grids in Ukraine the previous winter. The most costly cyber-attack in history, NotPetya, was launched by the Russian military last June. NotPetya encrypted and essentially ruined hard drives on thousands of Ukrainian computers. This cyber attack quickly spread well beyond Ukraine, causing billions of dollars in damages to businesses across Europe and as far away as the United States.

Most states lack the suite of diplomatic, military, and economic tools employed by Russia and China, but rogue regimes nonetheless cause concern because of their aggressive unpredictability in cyberspace. Iran and North Korea have growing capabilities in cyberspace, and although they have fewer technical tools, they employ aggressive methods to carry out malicious cyberspace activities. The Iranians recruit hackers for cyberespionage, surveillance of their population, cyber attacks on their neighbors and perceived opponents, and even attempts to penetrate our military systems. North Korea has limited Internet connectivity and likely views the Internet as a vector to employ in striking opponents and deterring potential threats. Pyongyang also uses cyber tools to evade economic sanctions and harvest hard currency for Kim Jong-Un's impoverished regime. The United States and our British allies have publicly attributed to North Korea last summer's WannaCry ransomware attacks; 51.92 in bitcoin, worth approximately $140,000 at that time, was transferred out of the bitcoin wallet used by WannaCry—one of many ways of using cyber techniques to generate revenue. Most concerning, we do not see these actors having the technical competence or imperative to avoid uncontrolled damage if they conduct cyber attacks against private-sector targets, especially critical infrastructure.

Various non-state actors in cyberspace cause us concern as well. The main operational problem is distinguishing their efforts and activities from the state-sponsored campaigns. Cyber criminals and terrorists increase the "noise level" for systems administrators and network defenders everywhere.

In this context, I should mention that improved attribution is in our strategic interest, but not strictly necessary to guard against many cyber threats. A particular malware is still dangerous whether it was developed and/or employed by organized criminals, ideological hactivists, or a state entity. The last year has witnessed an alarming spate of incidents involving increasingly sophisticated cyber tools. NotPetya and WannaCry, for example, both modified powerful tools posted on-line by an anonymous group calling itself Shadow Brokers. What makes this trend even more worrisome is the uncontrolled use of these destructive cyber tools, the wielders of which clearly did not care whether they disrupted or damaged systems far beyond their main targets. We have reason to believe that particular states are behind some of these cyber attacks, and the fact that they have cavalierly unleashed tools that damaged the computers of their own citizens, speaks volumes about their disregard for responsible state behavior in cyberspace. DOD systems escaped particular harm in these incidents, but that is because we made robust and early investments in active, layered defenses. Not everyone has such resources, and so innocent victims had their hard drives encrypted, their data stolen, and their businesses damaged. We do not have to gain positive attribution to each particular actor before we can act to protect ourselves and our allies and partners; in fact, all users must take basic steps to secure their data and systems. We need decisive responses at scale to threats and intrusions. That is where USCYBERCOM finds its mission.

THREE MILESTONES

Several developments will make 2018 a pivotal year for USCYBERCOM.

The first is USCYBERCOM's elevation to unified combatant command status. This will take place upon the confirmation and appointment of my successor, whom the President recently nominated. The elevation of USCYBERCOM demonstrates to international partners and adversaries our stake in cyberspace, and shows that DOD is prioritizing efforts to build cyber defense and resilience. Elevation reflects the importance of growing threats in cyberspace, and demonstrates that the United States is maintaining a leadership role. My successor will naturally want to make adjustments at USCYBERCOM to reflect his vision, but in many ways elevation will not drive sudden changes in primary aspects of the Command. The commander of USCYBERCOM will remain dual-hatted as the Director of the National Security

Agency/Chief, Central Security Service (NSA/CSS) in the near term. We at USCYBERCOM are already operating in the cyber mission space and have key partners among U.S. Government agencies and allies. These will remain constants for the foreseeable future.

In the long term, elevation entails significant adjustments in USCYBERCOM. You can grasp the implications by consulting the new Unified Command Plan (UCP) that the President approved in November 2017. The UCP made USCYBERCOM responsible for the planning and execution of global cyberspace operations. The responsibilities assigned to USCYBERCOM include: directing the operations, security, and defense of the DODIN; directing cyber defenses of the critical infrastructure that assures the Department can accomplish its missions; warning and defending against significant cyber attacks on the United States and its interests; coordinating across the Department and the U.S. Government before mounting operations that include our own cyber attack actions; detailing military liaison officers to U.S. Government and international agencies to represent the Command on cyber matters; advocating for cyberspace capabilities in the Department's programming and budgeting processes; integrating theater security cooperation of cyberspace operations in support of Joint Force commanders; and executing cyberspace operations in support of military and civilian authorities defending the Homeland, as directed.

The Unified Command Plan also gave USCYBERCOM new duties in keeping with Congress's intent to make it something of a hybrid Command along the general lines of U.S. Special Operations Command. Under its new Joint Force Provider responsibilities, as specified in the UCP, USCYBERCOM provides "mission-ready Cyber Mission Forces" to support Combatant Command mission requirements and identifies for the Chairman of the Joint Chiefs of Staff relevant "global joint sourcing solutions" (and supervises their implementation). In addition, under its new Joint Force Trainer role, USCYBERCOM ensures that joint cyber forces are trained and interoperable; sets standards for all joint cyber forces; conducts and supports Combatant Command-level exercises; and recommends strategy, doctrine, and procedures for joint cyberspace operations. With our new, Service-like functions, we will be preparing and submitting program recommendations and budget proposals for cyber operations forces; validating and prioritizing requirements, to include capabilities in any domain that enable employment of cyberspace capabilities; diversifying operational infrastructure; formulating and submitting requirements for intelligence support; coordinating with Military Departments on promotion, assignment, and recruitment of cyberspace operations forces; and exercising limited acquisition authority consistent with section 923 of the Fiscal Year 2017 National Defense Authorization Act (NDAA) and Section 807 of the Fiscal Year 2016 NDAA.

One would be correct in inferring from that list of responsibilities that USCYBERCOM must make significant changes over the next couple years while executing its expanding mission. Many of our leaders, teams, and action officers will thus be working double duty, directing and supporting ongoing cyberspace operations while overseeing the changes required by elevation as directed in the UCP. I need hardly add that the stability and hence predictability of our resource flow is especially important during this time.

The second important development to report is the progress of the Cyber Mission Force, specifically our projected completion of the force generation of the 133 CMF teams, with all of them attaining full operational capability by September. In fact, we might meet this target even earlier, likely in June of this year. This long-anticipated milestone is due to the years of hard work by the Services and the agencies, with the support of Congress. We at USCYBERCOM are completing the readiness management programs that will sustain the readiness of the CMF teams. After all, commissioning a warship—while an important event—does not make that ship mission-ready. On a ship, as on a Cyber Mission Force team, much work remains to be done to make the crew members proficient at their duties and the whole team ready and able to perform whatever missions might be directed.

Finally, in a matter of weeks USCYBERCOM will open its new Integrated Cyber Center and Joint Operations Center (ICC/JOC) at Fort Meade. Construction is nearly complete, and we will begin moving forces into the building in April. The facility is USCYBERCOM's first dedicated building, providing the advanced command and control capabilities and global integration capabilities that we require to perform our missions. I am grateful for the Congressional support that brought us so far in this long process, and of course I invite Members of the Committee to visit Fort Meade for a tour of our new facility.

On a related note, later this year USCYBERCOM will formally request your support for a new headquarters facility. My headquarters operates today from dozens of office suites in ten NSA-owned or -leased buildings dispersed across 50 square miles of the Baltimore-Washington Highway corridor. No other Combatant Com-

mander confronts such an obstacle, which makes efficient and effective staff function challenging. In an operating environment where seconds matter, we require a headquarters that facilitates staff and partner integration, information flow, and rapid decision making. I believe the right location for our headquarters is on Fort Meade in a purpose-built facility, and I will request your support for this requirement.

U.S. CYBER COMMAND'S MISSIONS AND PERFORMANCE

Our first and primary mission objective remains defending the information systems of the Department of Defense. Adversaries realized decades ago that the power of the U.S. military in no small part derives from its integrated and synchronized functioning, which in turn relies on networks, bandwidth, processing, and analytics. Operations, sustainment, intelligence, and command and control rely on sensitive networks linked across the public Internet infrastructure. Attacking our information systems looks to some adversaries like a way to stop the U.S. military. We know this because we read their doctrinal writings, we watch their probes of our systems, and we see how they monitor our personnel. If their efforts to penetrate the DODIN were to succeed and open avenues for attacks on our DOD networks and systems, then my fellow Joint Force commanders would find it difficult to execute their respective missions.

Securing and defending the DODIN is a crucial, 24-hour-a-day task. The old adage remains true: an ounce of prevention is worth a pound of cure. Secure information systems free us from the expense and time of remedying preventable intrusions, breaches, and disruptions. The WannaCry and NotPetya malwares mentioned above, for instance, exploited a vulnerability in Windows that Microsoft Corporation had patched weeks earlier. Many enterprises and users had installed those patches as a matter of course, keeping current with their security updates—as we had on the DODIN. We and they thus remained largely unharmed by these two outbreaks. No sooner did 2018 begin, than new challenges presented themselves in the form of widespread vulnerabilities—dubbed Meltdown and Spectre—that are inherent in nearly all computer processors. Coordinating such preventive measures in a timely fashion and across a huge enterprise like the DODIN is no easy feat, yet we have learned to do so in a regular, timely, and accountable manner. That is not to say that we do everything right in operating the DODIN; it is rather to reiterate the importance of a central command authority to assess operational risks, direct responses, and hold administrators accountable for executing prescribed remedies.

We see evidence every day that adversaries continue to probe the DODIN. Most such probes represent attempted espionage rather than cyber attacks, but cumulatively they force us to devote considerable resources and attention to defense—which perhaps is the intention behind them. Over the past year, our Cyber Protection Teams have been kept fully engaged with testing our systems and supporting the defensive efforts of our mission partners (more on this below). We appreciate the intent of Congress to assist us in this field as voiced in section 1640 of the Fiscal Year 2018 NDAA. That measure requires the Department of Defense to outline a Strategic Cybersecurity Program to work with USCYBERCOM in reviewing the cybersecurity of critical defense capabilities like nuclear command and control, sensitive information systems, and long-range strike assets.

Keeping DOD's information networks, weapons systems, and affiliated networks functioning and secure requires teamwork by many partners, particularly the Services, NSA, the Defense Information Systems Agency (DISA), the DOD Chief Information Officer (CIO), and the various cybersecurity service providers (CSSPs). In our experience, successfully defending our systems requires the application of time-tested operational principles for the Joint Force, as well as a tight connection with the activities to secure all DOD networked devices. In this regard, I am naturally concerned with any legislative or policy proposals that would take the management of operational risks out of the military chain of command and vest it in civilian staff or advisory components of DOD. I would point you specifically to language passed in the Fiscal Year 2018 NDAA (section 909) that provisionally authorizes the DOD CIO to set standards for and certify capabilities on DOD networks. This provision could be interpreted to make an official outside the military chain of command responsible for determining which capabilities a Joint Force commander can employ to perform his missions, and interpose another layer of review and delay in a development and acquisition process that greatly needs speed and agility.

To explain my reasoning here, the DODIN is equivalent to a joint security area in the terrain of cyberspace—essentially a set of bases and communications assets that enable and facilitate operations and mission accomplishment by the entire Joint Force. I am responsible for the security, operation, and defense of this joint

security area, and my ability to accomplish that mission is affected daily by the ever-shifting dynamics on the physical, logical, and personal levels that together constitute its terrain. I must both protect this terrain against potential threats and defend it against specific threat actors. The design, fielding, and operation of DOD information technology directly affects how I can move and maneuver to defend the DODIN, and thus the degree of risk that I must assume (and indirectly the degree of risk imposed on the entire Joint Force). As the commander, I should be the decision-maker for accepting and managing operational risks on the DODIN. It would also help for me to have a significant degree of influence in the development, adaptation, policy, and standards of DOD information technology, networks, and cyberspace capabilities.

Our second major mission objective is to defend the United States against cyber threats to U.S. interests and infrastructure. We are concerned that many such cyber attacks now occur below the threshold of the use of force and outside of the context of armed conflict, but cumulatively accrue strategic gains to our adversaries. The United States must continuously and persistently engage and contest cyber attacks, in order to reset adversary expectations about our behavior and commitment. The Secretary's new National Defense Strategy speaks to this point in discussing the Global Operating Model for the Joint Force, in which cyber is a foundational capability that remains in contact with adversaries "to help us compete more effectively below the level of armed conflict." Through consistent action, and in coordination with interagency partners, we can influence the calculus of hostile actors, deter malicious cyber activities, and clarify the distinction between acceptable and unacceptable behavior in cyberspace. Cyber capabilities can also disrupt and potentially deter non-cyber threats as well.

The importance of cyberspace for our nation's security and prosperity demands unified responses across departments and agencies regardless of sector or geography. Cyber capabilities should be integrated with plans and operations across all domains to influence and shape adversary behavior, in preparation for and during joint operations in a conflict, as well as outside of situations of armed conflict.

Equally integral to defending the nation against cyber attacks is collective defense and collaboration with our allies and partners, both domestically and abroad. USCYBERCOM facilitates whole-of-government planning. We are helping DOD increase collective situational awareness through our collaboration with partners like the Department of Homeland Security (DHS), the FBI, the Department of State, and other departments and agencies. Working with our interagency partners, we have also matured our collaboration with key critical infrastructure sectors. Such collaboration allows us to better understand events and trends in cyberspace. USCYBERCOM has established interagency coordination processes to foster intelligence sharing between the headquarters directorates and other United States Government entities.

As a functional combatant command, USCYBERCOM has the authority to engage directly with foreign partner equivalents as well. USCYBERCOM has deployed liaison officers to key foreign partners, and is crafting agreements to broaden collaboration and interoperability. Strengthening our foreign partnerships has paid dividends in recent years by increasing our capabilities and capacity. Command elevation will allow USCYBERCOM to mature such partnerships, building relationships and trust that will help us and our partners in shaping the cyberspace domain. We note here our support for the provision (Sec. 1239A) in the NDAA for fiscal year 2018 that would boost cybersecurity cooperation with NATO and European partners to thwart malign influence by Russia.

USCYBERCOM performs the third of its major missions by enabling Joint Force commanders to deliver the effects they require in and through cyberspace. We see an ever-increasing demand from the combatant commanders for support; cyber effects ensure the Joint Force can project power, enhance its lethality, and defend its command and control. Our Joint Task Force Ares has given important supporting fires to USCENTCOM and USSOCOM in the campaign to defeat ISIS on the ground in Iraq and Syria. We learned many lessons from that fight, particularly regarding intelligence in the battlespace and the broad applicability of traditional targeting processes in the cyber domain. Perhaps the most important takeaway from our experience was how to build the right processes to integrate cyberspace operations as one piece of a complex and coordinated multi-domain military campaign. I have directed our components to apply these and related lessons as we transition our temporary, joint task force model for fighting ISIS in cyberspace to an analogous and enduring construct that addresses the threat of violent extremism worldwide.

In supporting Joint Force commanders, USCYBERCOM is working to synchronize the planning and operations of cyber forces as "high-demand/low density" assets. Two Secretaries of Defense have now endorsed this change in how our cyberspace

assets are managed. The new construct provides the Commander of USCYBERCOM the authority to balance risk across the Joint Force by focusing cyber capacity where it is most needed, both in time and space. This strategic approach to military cyberspace assets will allow us to deter and respond to or preempt cyber threats in all phases of conflict and to synchronize cyberspace operations globally. We are building this concept into USCYBERCOM's operational and contingency plans.

The Chairman of the Joint Chiefs of Staff furthered this goal by updating the cyberspace operations command and control framework last fall, directing that USCYBERCOM establish Cyber Operations—Integrated Planning Elements (CO–IPEs) at each Combatant Command. We hope to have all of these new units at full operational capability within the next five years to plan, synchronize, integrate, and de-conflict cyberspace operations with Combatant Command plans and operations. CO–IPEs will be in direct support to combatant commanders but will remain under my command and under the administrative control of USCYBERCOM's Service components. USCYBERCOM is leading the planning effort to establish the CO–IPEs. The size and configuration of the CO–IPEs will naturally vary to best fulfill the mission requirements of their host commands; in most cases they will have fewer than 40 people. USCYBERCOM will monitor the Services' progress in standing up their respective CO–IPEs and provide guidance to synchronize their efforts.

Success in our missions depends on a trained and ready force. It sounds unoriginal to call people our most valuable resource, but for USCYBERCOM that old saying is true. I must thank Congress for recently increasing our agility in shaping our workforce; the new Cyber Excepted Service will help us recruit, manage, and retain cyber expertise in a highly competitive talent market. We are rapidly preparing to bring in talented people. With support from the NDAA, the Services have the ability to directly commission cyberspace operations officers, the first of whom will be entering the force early this year. As for our valuable civilian technical experts, we are using the ability to directly hire uniquely skilled people to strengthen our team. I also note that the Services will lead the cyber training mission in fiscal year 2019 as they take over the training functions that USCYBERCOM has performed in recent years. We have been preparing for that development for some time, and believe the transition will be seamless.

USCYBERCOM's success in cyberspace reflects a total force effort with fully integrated Reserve and National Guard cyber warriors who are trained to the same joint standard as the regular force. In our headquarters at Fort Meade, we employ more than 300 full-time and part-time reservists, providing support for intelligence, operations, planning, training, and cyber capability development. An additional more than 150 Reserve and National Guard members mobilize continually to lead and execute operations in support of CNMF and Joint Task Force Ares. The Reserve Component is especially valuable because Reservists often bring cyber skills from the private sector; many others come to us with insights from extensive federal or state government experience. In addition, the U.S. Army's Reserve and National Guard are building 21 Cyber Protection Teams (CPTs), with plans to reach full operational capability by fiscal year 2024. These Reserve Component Soldiers are in the fight today. For example, an all-Army National Guard team named Task Force Echo is made up of Soldiers from seven states and has been on-mission since last year, providing essential cyberspace support to our operations.

By the end of this summer, three National Guard and Reserve teams will achieve full operational capability. While that number in itself appears small, the Reserve Component's strength lies within its surge capacity. A significant portion of the Air Force Cyber's contribution will draw on more than a thousand Reserve Component members.

Recent events illustrated a need for improved coordination between Active Duty and Reserve Component cyber forces for domestic response. Future training partnerships between USCYBERCOM, the Reserve Component, state, local, and tribal governments, along with interagency partners, enable these core missions by empowering operations that target the threat outside the United States while allowing law enforcement and state authorities to defend against the threat within the Homeland.

Making all this work will require sustained training and exercises. USCYBERCOM personnel, both Active Duty and Reserve Component, hone their skills and their teamwork through increasingly realistic exercise scenarios and simulated network environments. This June, we will re-focus our annual Cyber Guard exercise from certifying tactical teams to validating our operational concepts. This year's planning takes account of state governors' and National Guard Adjutant Generals' concerns about protecting critical assets. It will be a true operational-level command exercise. Both our Cyber Guard and Cyber Flag will include more players from the other Combatant Commands, as well as whole-of-government and industry

participants to evaluate cyber capabilities in a Defense Support to Civil Authorities scenario involving foreign intruders in the nation's critical infrastructure. We have synchronized our efforts with the Chief of the National Guard Bureau and his Cyber Shield exercise as well as with our DHS partners and their Cyber Prelude exercise. Our exercises, moreover, have each year included a wider range of foreign partners in offensive and defensive cyber operations.

Finally, we also need to give good people good tools. In this regard, we are using our new acquisition authorities (conferred in the NDAA for fiscal year 2016), and executed our first such acquisition when we awarded a contract for IT executive research services in September 2017. The award was valued at over $500,000 and demonstrated that USCYBERCOM can acquire services and capabilities required to equip the Cyber Mission Force. Moreover, USCYBERCOM also delivered the first of several foundational tool kits enabling the CMF to work against adversary networks while reducing risk of exposure; its organic development team equipped JTF–Ares with capabilities to disrupt and influence adversary use of social media. We also thank the Congress for the provisions of the NDAA for fiscal year 2018 (section 1642), which requires USCYBERCOM to evaluate new, faster, and more agile development processes for cyber capabilities. We have a team focused on this task, and they should be ready to report their findings to the Secretary within the period stipulated in the Act.

CONCLUSION

Thank you again for inviting me to appear before you today to represent U.S. Cyber Command, and for all the times you have allowed me to do so over the past four years. Serving as Commander of USCYBERCOM has been the highlight of my military career. The Command has accomplished a great deal in the last four years, operationalizing the cyber mission space and making what seemed nearly impossible in 2014 look almost routine in 2018. Indeed, I have seen dramatic progress in just the past year as the Command matures and prepares for unified combatant command status. All this has been achieved because of the extraordinary talents and efforts of the men and women of USCYBERCOM and those of our mission partners. They are great people, and you should be so proud of them.

Your support has been of enormous help to the Command's maturation, and remains vital to the work that we perform on behalf of our nation. As you have surely gathered from my comments, we have big tasks ahead of us, and your continued assistance could make the difference between mission success and less satisfactory outcomes. I am confident in the ability and the drive of our people to accomplish the tasks before them, just as I have never wavered in my trust in your support for USCYBERCOM. Now I look forward to your questions.

Senator INHOFE. Thank you, Admiral Rogers.

Well, in my opening statement, I addressed this—the three agencies' approach that we have responsible for defending against the attacks. We have the FBI as the lead for law enforcement; the Department of Homeland Security is the lead for critical infrastructure and defending government computer networks; and, thirdly, the Department of Defense as the lead for defending the Homeland, defending military computer networks, and developing and employing military cyber capabilities. So, you've got the DOD, the DHS, and the FBI. No one agency—no one agency—has all the authorities required to defend and protect the Homeland. So, did we set it up wrong to start with? What needs to be done to encourage a more whole-of-government—you mentioned that in your opening statement—combating the cyberthreats that are out there?

Admiral ROGERS. So, I think the challenge, as I look at the problem set—and I'm looking at it from the perspective of an operational commander—"How do we execute and generate outcomes," if you will? I think it's less an issue of people not understanding what their respective roles are within the structure you outlined. Instead, I think the challenge is, "How do we integrate those capabilities into a tighter hole, if you will, that's really optimized to execute at the day-to-day level?" I think that's the area where I look

at the future, and, as I—you know, during my—with my responsibilities as Commander of Cyber Command, that's where I'd like to see us focus our efforts. How do we get down to integrated structures and organizations at the execution level? Because that's where you get speed. One of the challenges with the current structure—as I said, while I think people understand their respective roles, it is not optimized for speed and agility. One of the things that I see in the world we're living in right now, we have got to get faster and we have got to be more agile.

Senator INHOFE. Yeah. The—there's a lot of discussion about the gaps and seams that exist between each leg of the whole-of-government approach. Now, our adversaries will seek to exploit those gaps and seams, and the confusion that follows an attack as various agencies and departments grapple with the scattering of authorities needed to respond. What are the most dangerous gaps and seams, as you look at them?

Admiral ROGERS. So, for right now, the time it takes to deploy capability, the time that it takes to coordinate a response across multiple organizations, when those well-meaning and hard-working organizations are existing in separate structures, that's not optimized for speed. To me, what I think the biggest challenge for us is, "How do we integrate this more at an execution level?" I understand there's a broader policy issue here, and a broader legal framework. That's not my role as an operational commander. But, where I see the need for speed and agility is really when it gets down to——

Senator INHOFE. Is someone working on that now?

Admiral ROGERS. Oh, there's an ongoing dialogue about, "So what's the right way ahead?" Now, again, I'm the operational commander, so I have a voice in that——

Senator INHOFE. Maybe we have too many people in that.

Admiral ROGERS.—in that process. There's no lack of opinions on this topic.

Senator INHOFE. Yeah. Lastly, you had said previously—and I'm quoting now—"Offensive cyber, in some ways, is treated almost like nuclear weapons, in the sense that their application outside of defined area of responsibilities is controlled at the chief executive level; it is not delegated down." Has anything changed under this new administration——

Admiral ROGERS. So, we're currently—again, I don't want to speak for the policy side, but I will acknowledge we are currently in a policy discussion on this very issue. You know, the Secretary of Defense has been very aggressive in articulating this concerns him. There's an ongoing discussion at the moment that I hope is going to come to a way ahead in the near term. Again, I will get an input into that, as the operational commander. I'm not the primary decisionmaker, here. I understand what my role is.

Senator INHOFE. All right, good.

Senator Reed?

Senator REED. Well, thank you very much, Mr. Chairman.

Again, thank you, Admiral Rogers, for not only your testimony, but your service.

I have a series of questions, and I think they require just, sort of, yes-or-no answers.

The mission of National Mission Teams under DOD cyberstrategy is to blunt cyberattacks against the United States of, quote, "significant consequence." Is that accurate?

Admiral ROGERS. Yes.

Senator REED. Okay. Russia's——

Admiral ROGERS. Although, if I could, I'd phrase it as, that's an accurate mission for Cyber Command. We haven't actually defined it specifically down on the team level. But, I understand the point you're trying to make, sir.

Senator REED. Now, is Russia's ongoing campaign to steal and leak confidential information from our candidates' political parties to plant and amplify misinformation in social media, to break into State election board networks, of significant consequence to our national security?

Admiral ROGERS. Certainly, if successful.

Senator REED. Yes. Do you agree with DNI Coats' testimony that they will continue to conduct cyber operations to achieve strategic objectives unless they face clear repercussions?

Admiral ROGERS. Yes, sir, that was my testimony, as well, in that hearing.

Senator REED. Is Russia attempting to achieve its strategic objective by influencing United States public opinion in elections?

Admiral ROGERS. Yes, sir, I believe they are attempting to undermine our institutions.

Senator REED. Now, aside from our intelligence agencies operating under a presidential finding, are there any other organizations, other than the Cyber Command's Cyber Mission Forces, that have the authority and capability to disrupt Russian election hacking operations where they originate? Do the FBI, DHS, or the States, the private sector, have such authorities or capabilities?

Admiral ROGERS. You could argue, probably, only that—again, that there's a legal aspect to this that I'm not the most qualified—but, probably you'd argue some combination of DOD/DOJ [Department of Justice] have the standing authority in that regard.

Senator REED. But, the mission teams, particularly at the origin of these attacks, have the authority to do so.

Admiral ROGERS. If granted the authority. I don't have the day-to-day authority to do that. If granted the authority.

Senator REED. So, you would need, basically, to be directed by the President, through the Secretary of Defense——

Admiral ROGERS. Yes, sir, as I—in fact, I mentioned that in my statement.

Senator REED. Have you been directed to do so, given the strategic threat that faces the United States and the significant consequences you recognize already?

Admiral ROGERS. No, I have not. But, if I could flesh this out, I'll say something in an open, unclassified. I'd be glad to go into more detail——

Senator REED. Yes, sir.

Admiral ROGERS.—in a classified.

Based on the authority that I have as the Commander, I have directed the National Mission Force to begin some specific work—I'd rather not publicly go into that——

Senator REED. Right.

Admiral ROGERS.—using the authorities that I retain as a commander in this mission space.

Senator REED. So, it's inherent in the ability of a commander to prepare, plan——

Admiral ROGERS. Yes, sir.

Senator REED.—and structure. But, you need the—you need direct authority of the President, through the Secretary of Defense——

Admiral ROGERS. To do some specific things.

Senator REED. Some specific authority.

Admiral ROGERS. There are some things I have the authority, and I am acting within that authority now——

Senator REED. But, where you—essentially, we have not taken on the Russians yet. We're watching them intrude in our elections, spread misinformation, become more sophisticated, try to achieve strategic objectives, as you have recognized, and we're just, essentially, sitting back and waiting.

Admiral ROGERS. I don't know if I would characterize it as "we're sitting back and waiting," but I will say it's probably—and again, I apologize, I don't want to——

Senator REED. Right.

Admiral ROGERS.—get into the classified here—it's probably fair to say that we have not opted to engage in some of the same behaviors that we are seeing, if I could just keep it——

Senator REED. No, I—it's—one searches for, sort of, historical analogies, but, you know, we have, in the past, seen threats building, but, at some point, particularly when they've manifested——

Admiral ROGERS. Sir.

Senator REED.—themselves, which they already have in 2016, we've taken action, that we've not just continued to watch.

Admiral ROGERS. Right. No, we are doing some things.

Senator REED. Let's go back to the—in the brief time I have remaining—the issue that is, I think, consistent throughout your testimony and the Chairman's comments. That is, the technological aspects, which you do pretty well, and the cognitive issues, you know, the message versus the medium, we are all over the place, in terms of fragmentation. Is there any effort to pull that together? Let me, maybe, focus on a specific point. You know, you're trying, within DOD, to sort of get everybody lined up, then the SECDEF [Secretary of Defense] and the administration are trying to line up all the other parts. There's one—and I—from my experience in banking, the Treasury Department has a—which is designed to do—be disruptive of financial transactions, designed to—you know, it's not just ideas, it's money that motivates the——

Admiral ROGERS. Yes, sir. Yes, sir.

Senator REED. So, in your view, are you coordinating with them adequately? Two, do they have adequate resources on their own to be an effective force to disrupt illegal financing and to monitor sanctions?

Admiral ROGERS. So, I'm not knowledgeable enough about the specific level of capability and resources, but I will say we, both Cyber Command and NSA as well, spend a lot of time working with our Treasury counterparts about developing insights and

knowledge through cyber and other means that give them insight that enable them to take action.

Senator REED. Do you think they're effective?

Admiral ROGERS. Oh, I think the economic broader efforts that I've seen undertaken are positive. You've seen them against a wealth—a host of actors out there.

Senator REED. Thank you.

Senator INHOFE. Since a quorum is now present, I'd ask the committee consider a list of 1,288 pending military nominations. All of these nominations have been before the committee the required length of time.

Is there a motion to favorably report this list of 1,288 pending military nominations?

Senator REED. So move.

Senator WICKER. Second.

Senator INHOFE. Okay, second.

All in favor, say aye.

[A chorus of ayes.]

Senator INHOFE. Opposed, no.

[No response.]

Senator INHOFE. The motion carries.

[The list of nominations considered and approved by the committee follows:]

MILITARY NOMINATIONS PENDING WITH THE SENATE ARMED SERVICES COMMITTEE WHICH ARE PROPOSED FOR THE COMMITTEE'S CONSIDERATION ON FEBRUARY 27, 2018.

1. In the Army there is 1 appointment to the grade of colonel (Devry C. Anderson) (Reference No. 1154)
2. **In the Air Force there is 1 appointment to the grade of brigadier general (Lee H. Harvis)** (Reference No. 1221)
3. In the Air Force there are 25 appointments to the grade of major (list begins with Paul Obi Amaliri) (Reference No. 1235)
4. In the Navy there is 1 appointment to the grade of lieutenant commander (Henry J. Kennedy) (Reference No. 1246)
5. In the Navy there is 1 appointment to the grade of captain (John A. Mills) (Reference No. 1302)
6. **In the Air Force Reserve there are 24 appointments to the grade of brigadier general (list begins with Michael L. Ahmann)** (Reference No. 1449)
7. **In the Air Force Reserve there are 5 appointments to the grade of brigadier general (list begins with Christopher R. Alderdice)** (Reference No. 1450)
8. **In the Marine Corps Reserve there are 3 appointments to the grade of brigadier general (list begins with Timothy L. Adams)** (Reference No. 1459)
9. In the Marine Corps there is 1 appointment to the grade of lieutenant colonel (Lonnie M. McGhee, Jr.) (Reference No. 1494)
10. In the Air Force there are 17 appointments to the grade of lieutenant colonel (list begins with Carl P. Bhend) (Reference No. 1502)
11. In the Air Force there are 56 appointments to the grade of colonel (list begins with Steven J. Acevedo) (Reference No. 1503)
12. In the Air Force there are 289 appointments to the grade of major (list begins with Nataliya A. Ables) (Reference No. 1504)
13. In the Air Force there are 67 appointments to the grade of major (list begins with George Z. Aberth) (Reference No. 1505)

14. In the Air Force there are 121 appointments to the grade of lieutenant colonel (list begins with Kevin D. Alford) (Reference No. 1506)
15. In the Air Force there are 6 appointments to the grade of colonel (list begins with Ann E. Alexander) (Reference No. 1507)
16. In the Army there are 90 appointments to the grade of major (list begins with Andrew A. Arndt) (Reference No. 1508)
17. In the Army there is 1 appointment to the grade of lieutenant colonel (Tyler M. Abercrombie) (Reference No. 1509)
18. In the Army there is 1 appointment to the grade of lieutenant colonel (Randolph S. Carpenter) (Reference No. 1510)
19. In the Army there is 1 appointment to the grade of major (Angel Soto) (Reference No. 1511)
20. In the Army there are 2 appointments to the grade of lieutenant colonel (list begins with Matthew C. Dawson) (Reference No. 1512)
21. In the Navy there is 1 appointment to the grade of captain (Eric C. Correll) (Reference No. 1513)
22. **In the Air Force there are 3 appointments to the grade of major general (list begins with John J. DeGoes)** (Reference No. 1550)
23. **BG Jeffrey P. Kramer, ARNG to be major general** (Reference No. 1552)
24. **RADM(lh) Gordon D. Peters, USN to be vice admiral and Commander, Naval Air Systems Command** (Reference No. 1553)
25. **RADM Brian B. Brown, USN to be vice admiral and Commander, Naval Information Forces** (Reference No. 1554)
26. In the Air Force there is 1 appointment to the grade of colonel (David J. Caswell) (Reference No. 1557)
27. In the Air Force Reserve there is 1 appointment to the grade of colonel (Bruce P. Heseltine) (Reference No. 1558)
28. In the Air Force there are 2 appointments to the grade of lieutenant colonel and below (list begins with Michael T. Cain) (Reference No. 1559)
29. In the Air Force there are 3 appointments to the grade of lieutenant colonel and below (list begins with Kerry L. Hirzel) (Reference No. 1560)
30. In the Air Force there is 1 appointment to the grade of major (Miguel J. Morales) (Reference No. 1561)
31. In the Air Force there are 3 appointments to the grade of major (list begins with Julie A. Bowman) (Reference No. 1562)
32. In the Army there is 1 appointment to the grade of lieutenant colonel (Thomas A. Summers) (Reference No. 1565)
33. In the Army there is 1 appointment to the grade of lieutenant colonel (Christina M. Buchner) (Reference No. 1566)
34. In the Army Reserve there is 1 appointment to the grade of colonel (Marcia L. Lewis) (Reference No. 1567)
35. In the Army there is 1 appointment to the grade of colonel (Jack E. Shields III) (Reference No. 1568)
36. In the Army there is 1 appointment to the grade of lieutenant colonel (Jerzy M. Matyszczuk) (Reference No. 1569)
37. In the Army Reserve there are 8 appointments to the grade of colonel (list begins with Alecia D. Biddison) (Reference No. 1570)
38. In the Army Reserve there are 10 appointments to the grade of colonel (list begins with Joseph W. Bishop) (Reference No. 1571)
39. In the Army there is 1 appointment to the grade of major (Jennifer L. White) (Reference No. 1572)
40. In the Army there is 1 appointment to the grade of major (Patrick E. Mather) (Reference No. 1573)
41. In the Army there are 4 appointments to the grade of colonel (list begins with Luis G. Fuchu) (Reference No. 1574)
42. In the Army there is 1 appointment to the grade of major (Olivia H. Ivey) (Reference No. 1576)

43. In the Army there is 1 appointment to the grade of major (Han S. Kim) (Reference No. 1577)
44. In the Army there is 1 appointment to the grade of colonel (John E. Richardson) (Reference No. 1578)
45. In the Army there is 1 appointment to the grade of lieutenant colonel (Paul A. White) (Reference No. 1579)
46. In the Army Reserve there are 4 appointments to the grade of colonel (list begins with Robert T. Carter, Jr.) (Reference No. 1580)
47. In the Navy there is 1 appointment to the grade of lieutenant commander (Jamal L. Headen) (Reference No. 1584)
48. In the Navy there are 44 appointments to the grade of lieutenant commander (list begins with Patrick P. Arrigo) (Reference No. 1585)
49. In the Navy there is 1 appointment to the grade of lieutenant commander (Jessica M. Ferraro) (Reference No. 1586)
50. In the Navy there is 1 appointment to the grade of lieutenant commander (Vijay M. Ravindra) (Reference No. 1587)
51. In the Navy there is 1 appointment to the grade of captain (Elisabeth S. Stephens) (Reference No. 1589)
52. In the Marine Corps there are 7 appointments to the grade of lieutenant colonel (list begins with Michael E. Feuquay) (Reference No. 1591)
53. **Col. John J. Allen, USAF to be brigadier general** (Reference No. 1593)
54. **Col. Todd M. Lazaroski, USAR to be brigadier general** (Reference No. 1595)
55. In the Air Force there are 375 appointments to the grade of colonel (list begins with Marc M. Adair) (Reference No. 1599)
56. In the Army there is 1 appointment to the grade of lieutenant colonel (Kyle R. Stiefel) (Reference No. 1602)
57. In the Army Reserve there is 1 appointment to the grade of colonel (Adam C. Miller) (Reference No. 1603)
58. In the Army there is 1 appointment to the grade of colonel (Mathew M. Condry) (Reference No. 1604)
59. In the Army there are 45 appointments to the grade of lieutenant colonel (list begins with David A. Amamoo) (Reference No. 1605)
60. In the Army there is 1 appointment to the grade of lieutenant colonel (Jason B. Yenrick) (Reference No. 1606)
61. In the Marine Corps there are 7 appointments to the grade of major (list begins with Shawn P. Chabot) (Reference No. 1607)
62. In the Marine Corps there are 5 appointments to the grade of major (list begins with Enrique Luz, Jr.) (Reference No. 1608)
63. In the Marine Corps there are 4 appointments to the grade of major (list begins with Jeffrey A. Bryant) (Reference No. 1609)
64. In the Marine Corps there are 2 appointments to the grade of major (list begins with Andrew E. Cheatum) (Reference No. 1610)
65. In the Marine Corps there are 4 appointments to the grade of major (list begins with Brian K. Evans) (Reference No. 1612)
66. In the Marine Corps there are 3 appointments to the grade of major (list begins with Daniel H. Flick) (Reference No. 1613)
67. In the Marine Corps there are 2 appointments to the grade of major (list begins with Ezra H. Bardo) (Reference No. 1614)
68. In the Marine Corps there are 2 appointments to the grade of major (list begins with Matthew C. Pampush) (Reference No. 1615)
69. In the Marine Corps there are 2 appointments to the grade of major (list begins with Odin Pineda) (Reference No. 1616)
70. In the Army there is 1 appointment to the grade of major (David R. Addams) (Reference No. 1626)
71. In the Army there is 1 appointment to the grade of major (Pankaj A. Ksheersagar) (Reference No. 1627)

72. In the Army there is 1 appointment to the grade of major (Michael P. Sargent) (Reference No. 1628)
73. In the Army there is 1 appointment to the grade of major (Nicholas E. Hurd) (Reference No. 1630)
74. In the Army there is 1 appointment to the grade of major (Michael C. Agbay) (Reference No. 1631)
75. In the Army Reserve there is 1 appointment to the grade of colonel (Jay A. Iannacito) (Reference No. 1632)
76. In the Marine Corps there are 2 appointments to the grade of major (list begins with Natalie E. Moore) (Reference No. 1633)

TOTAL: 1,288

Senator Ernst?

Senator ERNST. Thank you. Thank you, Mr. Chair.

Admiral Rogers, in your opening statement, you rightly noted the importance of National Guard and Reserve cyber warriors. Many of those young men and women bring critical cyber skills from the private sector. Very, very important. However, you don't mention how or if the DOD plans to track cyber capabilities found in the National Guard and Reserve Force. We've had this discussion before. But, in 2016, the Government Accountability Office report found that "National Guard units have developed capabilities that could be used, if requested and approved, to support civil authorities in a cyber incident. However, the Department of Defense does not have visibility of all National Guard units' capabilities for this support," end quote.

Last year, I introduced legislation, along with my committee colleagues, Senators Gillibrand and Senator Fischer, to correct this oversight. Unfortunately, it wasn't included in the final version of the 2018 NDAA [National Defense Authorization Act]. As of July of 2017, DOD has not complied with the GAO's [Government Accountability Office] recommendation.

So, sir, how do you ensure Cyber Command is fully tapping into the expertise of our National Guard and Reserve units when the DOD doesn't have visibility of all of the capabilities within the National Guard? What more can we do to correct this at Cyber Command?

Admiral ROGERS. So, I try to work closely with General Lengyel and the National Guard Bureau, the National Guard team. I complement them. They just established and released a cyber strategy, for example, just last month, as a matter of fact. We were part of that dialogue about, so how do we make sure we're doing, you know, an integrated approach within the DOD here? This can't be an Active-only component or civilian-only component.

As you and I have previously discussed the aspects of your question, in some ways, you know, we're beyond, you know, my immediate responsibilities. What I've tried to work with the National Guard Bureau is, "So how do we create a structure that enables us to access the full range of capability?" Not just units, but, to your point, "Hey, how do you get down to the individual bubble?"

It's similar, in many ways—putting on my other hat, Director of NSA—we've tried to do the same thing over time for language. Many people in the Department have language skills that have no connection with whatever their job is that we've trained them to

do. I'm trying to see, "Can we do the same thing over time with the Guard and the Reserve?"

Senator ERNST. Certainly. An additional identifier or something——

Admiral ROGERS. Right.

Senator ERNST.—that can be tracked. I think we really need to focus on that much more so than we have done in the past, just because of the continuing threat that we see in cyber out there. You know, as—kind of along this same theme, though, it is such an important part of our national defense, and we're going to have to continue to improve our capabilities and readiness in this area. If you could, in just the couple of minutes that I have left, what more can we do to make sure that we have an adequate pool of really talented individuals that can step up into these fields? We've seen, at large, military recruiting has been very difficult, even for our regular branches of service. So, what can we do to make sure that we are filling the gap with qualified individuals that meet the requirements of today's military?

Admiral ROGERS. So, first, to me, you've got to look at it as an ecosystem and realize there's different components to this cyber population, from civilians to Active military to Guard and Reserve. Each one of those components has different attributes. So, one of the things we need to do is come up with solutions that optimize for each of these subpopulations. So, the Congress, for example, with the Civilian Excepted Service, the CES, effort, that's a big positive for us on the civilian side. On the DOD side, the Services are—for Active, are working through, "So, you know, are there other compensation tools, for example, that we can use?" "Are there other things we need to do in terms of the commitment we make to individuals when they first enlist or get commissioned, in terms of, 'Can we align them early on and offer them extended service in the cyber arena?'"

On the Guard and Reserve, it's a similar kind of thing, though one—it goes to your point—the one thing I've—it's been a little while since I had this conversation with General Lengyel, but, outside the Army Guard and the Army Reserve and the National Guard, the other Services tend to use Reserves on a cadre status, as opposed to units. One of the things that I'm trying to work with my Guard teammates on, "Is there a way to both use the unit structure that's traditional within the Guard, but also maybe a cadre kind of thing?" That gets to your point about, "How do we access individual skills?" We are clearly not there yet, but I'm wondering, "Is that a part of the future structure that we need to be looking at, that we haven't, to date?"

Senator ERNST. Right. Thank you. My time is expired, but certainly this is an issue we need to wrangle with and make sure that we're coming up with an appropriate answer.

So, thank you, Admiral, very much.

Senator INHOFE. Thank you.

Senator Nelson.

Senator NELSON. Admiral, thank you for your public service, your long service. We wish you well in retirement.

Since Senator Rounds is not here, I will speak for him, in that we have the privilege of leading the Cyber Subcommittee. I want

you to know that we think the public sector in the Department of Defense are woefully unprepared and split and segmented and not coordinated to be able to handle now what is one of the greatest threats to our national security, the cyberattacks that constantly come. We feel that about the private-sector community, as well.

Now, having said that, Mr. Chairman, I want to enter into the record a letter that Senator Blumenthal, Senator Shaheen, and I sent to the Secretary of Defense, February the 6th. One of the things that we ask is that the National Mission Teams, which are part of U.S. Cyber Command's Cyber Mission Force, should be ordered to prepare to engage Russian cyber operators and disrupt their activities as they conduct clandestine influence operations against our forthcoming elections.

Would you enter that into the record, Mr.——

Senator INHOFE. Without objection.

[The information referred to follows:]



United States Senate
WASHINGTON, DC 20510-0905

February 6, 2018

The Honorable James N. Mattis
Secretary of Defense
1000 Defense Pentagon
Washington, DC 20301

Dear Secretary Mattis:

The Government of Russia, at President Vladimir Putin's direction, conducted an extensive campaign to influence our elections in 2016. The Russian campaign—a mix of covert intelligence operations, disinformation, and propaganda spread through traditional and social media—represents a serious and unprecedented attack on American democracy.

While the Obama Administration imposed targeted sanctions on Russia in response to the attack, just last week, the Trump Administration elected not to impose further sanctions. Yet, Russia's influence activities continue in the United States and elsewhere, according to the Director of the Central Intelligence Agency. As the 2018 midterm elections are now only months away, there is no time to lose in countering Russian influence through multiple means.

Because Russian influence is conducted largely through cyberspace, National Mission Teams (NMTs), part of the U.S. Cyber Command's Cyber Mission Force, should be ordered to prepare to engage Russian cyber operators and disrupt their activities as they conduct clandestine influence operations against our forthcoming elections. The mission of these forces is to defend the Nation, including critical infrastructure like our election systems, from foreign attack and we urge the Department of Defense to consider employing them as soon as possible.

Additionally, we urge you to implement the recommendations of the Department's own Defense Science Board's Task Force on Cyber Deterrence. The Task Force's report outlined a strategy to deter further Russian attacks on our democracy by threatening those things that our adversaries hold most dear through tailored campaigns of both cyber and information operations. To my knowledge, the Department has yet to implement these critical recommendations.

Defending our democracy must rank among the most important responsibilities of our government, including our military cyber forces. We are grateful for your continued service to the country and appreciate your prompt attention to this most pressing threat.

Sincerely,

Bill Nelson

Jeanne Shaheen

Richard Blumenthal

Senator NELSON. Now, Admiral, let me ask you. Is there any question in your mind that they have—they, the Russians——

Admiral ROGERS. Russians.

Senator NELSON.—have conducted these kind of activities against our past election?

Admiral ROGERS. No, sir.

Senator NELSON. Okay. In an answer to Senator Reed, you had said, "Yes, if the Russians were successful," as if there was some doubt in your mind that they had been successful. That's not the case——

Admiral ROGERS. No, sir, I apologize. The point I was trying to make—the quote that Senator Reed used was from the strategy, where it talked about acts of "significant consequence." I was trying to get to the "consequence"——

Senator NELSON. Okay. So——

Admiral ROGERS.—piece of the plan.

Senator NELSON. So, we have been attacked, and there are a lot of us that feel like we are still being attacked and that we're going to be attacked, particularly with regard to our elections, which we consider as critical infrastructure. Let the record note that you nodded affirmatively. So, what's the holdup?

Admiral ROGERS. Well, I'd say there's a series of—and again, this is much broader than the DOD, much broader than Cyber Command—Department of Homeland Security is overall responsible for this—the election infrastructure within the segments that private—that have been identified as critical infrastructure. They're the sector lead. In fact, I've had this conversation with the Secretary of Homeland Security within the last couple of weeks about what we're doing to try to generate insights and knowledge to try to help their effort in their leadership role.

Senator NELSON. Let me be appropriate and respectful——

Admiral ROGERS. What?

Senator NELSON.—but let me interject, please, because time is fleeting.

Admiral ROGERS. Sir.

Senator NELSON. Let's get—so, for someone who is looking out for the common defense of this country to say, "Well, they've got the lead, and this is that, but I'm the Cyber Commander, and it's going to be a combatant command"—that doesn't cut it over here.

Admiral ROGERS. Yes, sir. The challenge for us is, we have this thing called the law and the legal framework that, right now, shapes what DOD can and cannot do.

Senator NELSON. So——

Admiral ROGERS. I'm not trying to minimize that. It——

Senator NELSON.—what do you need——

Admiral ROGERS.—certainly impacts me——

Senator NELSON.—Admiral——

Admiral ROGERS.—as an operational commander.

Senator NELSON.—what do you need, as the commander, to say, "Go after and punish these guys that are trying to tear apart our critical infrastructure"? What do you need?

Admiral ROGERS. So, I'd need a policy decision that indicates that there is specific direction to do that. Then I would need—again, I'd have to tee up—the normal way we work this process,

I would then be tasked to tee up some specific options. I'd rather not go into the specifics of any of that, and they would be reviewed by the Secretary, the chain of command. The Secretary ultimately would make a recommendation to the President as to what he, the Secretary's, views are here, and then, based on that, we'd be given specific direction, potentially, and specific authority.

Senator NELSON. So, you need a direction and specific authority from the White House.

Admiral ROGERS. Right. The President ultimately would make this decision——

Senator NELSON. From the President.

Admiral ROGERS.—you know, in accordance with a recommendation, in my experience, from the Secretary of Defense, and others. I would assume the Department of Homeland Security and others would be——

Senator NELSON. So, the chain of command——

Admiral ROGERS. Yes, sir.

Senator NELSON.—is what you need.

Admiral ROGERS. Sir.

Senator NELSON. All right.

Let the record reflect that we have written to the Secretary of Defense, February the 6th, and would appreciate an answer.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you?

Senator Perdue?

Senator PERDUE. Thank you, Mr. Chairman.

Admiral, thank you for your——

Admiral ROGERS. Sir.

Senator PERDUE.—decades of service. I remember your testimony last year. You've been nothing but consistent, talking about speed and agility. I hope, in retirement, you'll find a way to continue to nudge us toward that goal.

I've got a question to follow up on a couple of questions we've already had today. Recently the Defense Science Board—last year, actually—concluded—and there's a quote here: "For at least the next decade, the offensive cyber capabilities of our most capable adversaries are likely to far exceed the United States ability to defend key critical infrastructures." Sir, do you agree with that conclusion?

Admiral ROGERS. I mean, we were a part of that effort with the DSB [Defense Science Board]. There is no doubt that, for right now, I would argue, technology favors the offense vice the defense. I mean, just what you're—the scope of what you're trying to defend, the scope of potential vulnerabilities or—boy, it keeps you awake at night.

Senator PERDUE. So, the ability to preclude it is minimal, and you mentioned, last year——

Admiral ROGERS. Well, "preclude it," from a technical standpoint.

Senator PERDUE. Yes.

Admiral ROGERS. But, then that gets into the whole broader question about, "Are there other activities that could be brought to bear that would convince——"

Senator PERDUE. Well, that's my next question——

Admiral ROGERS."—you know, on——"

Senator PERDUE.—is deterrence.

Admiral ROGERS. Yes, sir.

Senator PERDUE. You talked, last year, about deterrence. So, has our ability to deter these types of activities—you know, a nuclear attack, we deter by having the threat of mutual annihilation, right? So, in the cyber space, what is our deterrence capability today, relative to where we were a year ago? Is it adequate to defend against intrusion?

I want to add to that, specifically, with—we've had these questions about election. In your mind, are we capable—the United States—of defending our election, this coming year?

Admiral ROGERS. Now, I'm not an expert on the electoral system, as a whole. I haven't personally looked at it as a target, so to speak, and asked myself——

Senator PERDUE. But, that—doesn't that speak to the issue? I mean, I know Homeland Security is charged with that.

Admiral ROGERS. Right.

Senator PERDUE. But, is their capability up to your capability, in Defense? Then you get inside DOD, you've got—each service has their own growing capabilities. So, the question I have—and we've all talked around it here—is, "So who's really in charge of getting the highest and best deterrence, detection, and preclusion capabilities regarding, let's just say, an election, as one part of our critical infrastructure?"

Admiral ROGERS. So, in our constitutional structure, States largely have overall responsible for the execution of an election process. Within the Federal Government, the Department of Homeland Security is overall responsible for providing government resources to assist the States in the execution and defense of that structure. Again, that is a DHS lead role. So, I don't—in my role as Cyber Command, I'd be the first to admit, I'm not talking to individual State officials about, "Walk me through what your structure is, give me your assessment of where you think you are." I'm trying to generate insights and knowledge now that help inform this with a readiness to—if directed, to potentially do more.

Senator PERDUE. You interact with DHS——

Admiral ROGERS. Oh, yes, sir.

Senator PERDUE. Okay.

Second thing, following up on the deterrence capability. What are the menu of options that you, in the Department of Defense, can give the President, should he so choose to respond to the cyberattacks, if we—if we have a deterrent, then the question is, "Is there a like response, similar response?" What are the menus—what's included in the menu for the President?

Admiral ROGERS. So, the first point I would make is, number one, merely because someone comes at us in cyber doesn't mean we should automatically default to a, "We have just to respond in kind." I have always urged, we need to think more broadly, look at the full range of levers and capabilities, as a Nation, that we——

Senator PERDUE. Have we ever responded in kind?

Admiral ROGERS. Oh, there are certain specific steps that have been taken over the course of the last couple of years. Again, to have an argument about—"is it sufficient or not? But, there have been some specific steps taken. And again——

Senator PERDUE. Well——

Admiral ROGERS.—I would rather not get into that——

Senator PERDUE. I understand that, and I wouldn't ask that in open——

Admiral ROGERS.—publicly.

Senator PERDUE.—an open hearing. But, it's pretty obvious to me, as one Senator sitting here, that the diplomatic efforts here are failing, that the activity is really one-sided——

Admiral ROGERS. Right. We're not where we need to be, or where we want to be. I don't think there should be any——

Senator PERDUE. No, and I want to—I now want to about, "What can we do about it?" That is—go back to speed and agility. We're going to be about 1.8 million cyberwarriors short over the next 5 years. There's a——

Admiral ROGERS. As a nation——

Senator PERDUE.—as a country, both—in all three of these—FBI, DHS——

Admiral ROGERS. Right.

Senator PERDUE.—and DOD. So, the question is—we're not going to win that war against China, for example, in terms of the ability to put cyberwarriors in the field. The question is, "Where does—where do technology and, like, artificial intelligence come to bear?" Where are we climbing that hill, in terms of—if this were a trigger puller, we'd stand up a number of soldiers against their soldiers, and all that. That's a historical—that's the——

Admiral ROGERS. Right.

Senator PERDUE.—the last war. The future war may be, you know, how to—who's got the best minds focused on artificial intelligence, robotics, et cetera, et cetera? Just on this specific case, where are we, in terms of artificial intelligence? How is that going to help us face the shortfall in cyberwarriors over the next 5 years?

Admiral ROGERS. So, we're clearly looking at what are the technical applications and capabilities out there that enable us to optimize the human capital piece of this, that are also—I'm also interested in the fact, guys, as—to your point—we are not going to Industrial Age our way out of this——

Senator PERDUE. Right.

Admiral ROGERS.—with, well, it's just hire 10,000 more people.

Senator PERDUE. Right.

Admiral ROGERS. That's not going to get us——

Senator PERDUE. Right.

Admiral ROGERS.—where we need to be. That's not a sustainable strategy. Therefore, among the things we're looking at—and we're not the only ones—so how can you apply technology to help overcome the human capital piece?

The other point I would make is, again, don't just focus on cyber versus cyber. How do we bring this broader range of capabilities in place to convince actors out there—nation-states, criminals, nonstate actors—"You don't want to engage in this behavior, either because you're not going to succeed or because, quite frankly, even if you do succeed, the price you will pay will far exceed any benefit you might gain"?

Senator PERDUE. Yeah.

Admiral ROGERS. That's where we've got to get to.

Senator PERDUE. Yeah. Agree. Thank you, Admiral.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Shaheen?

Senator SHAHEEN. Thank you, Mr. Chairman.

Admiral Rogers, thank you for your service. We will miss you when you retire.

I want to follow up on both Senators Reed and Nelson's questions about the 2016 election and the action of the administration. I just want to be clear. As I understand, you said that President Trump has never ordered CYBERCOM to take any action to defend or thwart Russian attempts to meddle in the elections this fall. Is that correct?

Admiral ROGERS. So, I said I've never given—I've never been given any specific direction to take additional steps outside my authority. I have taken the steps within my authority, you know, trying to be a good proactive commander. Because my view is——

Senator SHAHEEN. But, no one from the administration has asked you to take any additional steps. Is that correct?

Admiral ROGERS. I haven't been granted any, you know, additional authorities, capacity, capability. No, that's certainly true.

Senator SHAHEEN. I understand that to be a confirmation of what I just said. Is that correct?

Admiral ROGERS. I thought that's what—I apologize.

Senator SHAHEEN. Okay.

Admiral ROGERS. All right.

Senator SHAHEEN. It's come to my attention that the Department of Defense contracts with IT [Information Technology] companies that share sensitive source code data with Russia and other hostile governments while they do business overseas, and that this practice risks exposing sensitive underlying codes within our national security platforms to hostile governments. As I understand, there aren't any safeguards, like disclosures, to protect against these risks. Can you confirm whether that's the case and what the role of CYBERCOM is in ensuring the safety and integrity of DOD's platforms?

Admiral ROGERS. Right. So, first, I have no—Cyber Command has no direct role with non-DODIN—with civilian users here, if you will. Now, having said that, I'm aware of this issue, and we have worked with others in the Department to try to address, "Okay, so what are some of our key vendors and providers doing, here?" There have been several incidents where I've actually bore—dug into execution-level, "Walk me through exactly what you've done with your code. Walk me through exactly who had access to it. I want to compare this version that you tell me you shared with them versus what we currently are using within the DOD." I've done that in a couple of instances.

But, your point goes to—and several of you have raised it already—going to a broader dialogue about, what should the nature of the relationship be between the Department and its key infrastructure in this digital world that we're living in? It just forces us to step back and look at things very differently, to me. We never used to think about things, 10 years ago, about, "Who are you sharing source code with? You know, who are you doing your testing with?" In the world we're living in now, those are the kinds of dis-

cussions that we've got to have. "Who are your supply-chain providers?"

Senator SHAHEEN. So, who has the responsibility to decide that? If it's not CYBERCOM, is it the Secretary of Defense?

Admiral ROGERS. So, the Defense Security Service has overall responsibility within the DOD for the interaction with our cleared defense contractors from a cybersecurity perspective. I will partner with DSS [Defense Security Service]. The FBI is also involved here. One of the discussions that currently I'm raising within the Department is—experience teaches us, I think, we need to step back and ask ourselves, "Do we have this model optimized?" I won't go into the specifics, but there's a specific scenario we're working our way through right now that I'm trying to use as an example of: This is why we need to make some fundamental change. I'm glad to talk about that in a closed——

Senator SHAHEEN. So, should CYBERCOM have that responsibility, or should someone else have it?

Admiral ROGERS. I don't know. Part—quite frankly, one of my challenges, you just look at the things we've talked about in the last 40 minutes, where you have said to me, "Hey, why doesn't Cyber Command to do this? Why doesn't Cyber"—and I'm going—the challenge for us is about prioritization, aligning mission with resources, and trying to figure out what's our role with a broader set of partners? One of the points I try to make within the DOD is, "Be leery about viewing Cyber Command as the end-all/be-all for everything." If we try to do everything, we're going to suboptimize ourselves, so we need to focus on one of the priority areas.

Senator SHAHEEN. That makes sense to me, but the concern I have is who's in charge? Unless there's somebody who's responsible for coordinating activities for dealing with what Homeland Security is doing and what Cyber Command is doing and what DOD is doing and what the White House is doing, nobody's going to be in charge. And——

Admiral ROGERS. Yes, ma'am.

Senator SHAHEEN. It seems to me that that's a challenge that we have right now. As you look at what our both defensive and offensive strategy is around cyber for the United States, do you believe that we have those—that strategy in place? Could you articulate that, either now or in a closed——

Admiral ROGERS. I mean, I believe——

Senator SHAHEEN.—in a way that we can understand?

Admiral ROGERS.—I believe we have a structure in place, with well-defined responsibilities, but, as we said previously, my argument would be, I think experience is showing us that we need to be mindful—while we understand that structure, is it generating the outcomes that we want? My answer would be, "We're not where we need to be." So, that would argue, doing more of the same is not necessarily going to generate different outcomes. Even as I acknowledge I have a narrowly defined role, but I try to, along with others, act as a, "Look, we need to focus on this area."

Senator SHAHEEN. Well, I would certainly agree. I don't think a structure and a strategy are the same thing. While we may have a structure in place, it doesn't seem to have produced a strategy that's easily understandable.

Admiral ROGERS. Ma'am.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman. That's a statement. I'm not asking for a response.

Senator INHOFE. Senator Fischer.

Senator FISCHER. Thank you, Mr. Chairman.

Good morning, Admiral. It's nice to see you.

Admiral ROGERS. Ma'am.

Senator FISCHER. Admiral, the NDS [National Defense Strategy] highlights Cyber's importance, I think, quite a bit. How does that National Defense Strategy's prioritization of long-term strategic competitions with Russia and China impact CYBERCOM's mission?

Admiral ROGERS. So, I like the fact that the strategy expressly calls out cyber as a domain. The strategy also expressly calls out the fact that we've got peer competitors and near-peer competitors in here that we have—within the cyber arena, that we have to be capable of dealing with. I also like the fact that the strategy specifically calls out competition—trying to remember the phrase—it's "competition below conflict"—at a level below conflict, you know, the so-called gray area—which I think is very powerful. That gray area goes to many—much of the discussion we've had so far this morning. This activity that is occurring, short of armed conflict, if you will, that is generating strategic advantage for others and not in our best interests. I like the fact that the strategy acknowledges we are living in a world where this is now becoming the norm, and we have got to figure out how we're going to deal with this.

Senator FISCHER. As we look at that continuing focus with our peer competitors—with Russia and China—I think that means we're going to have to do more with less, and we may see less of a focus on other areas, where, in the past, CYBERCOM's been very focused, whether it's with the global terrorists or with Iran and their proxies. So, with those tradeoffs, I think that brings a lot of risk. How do you propose that CYBERCOM and the Department are able to handle that type of risk?

Admiral ROGERS. So, within the last year, I and others made an argument, and the Secretary bought off on it, where I said, "Look, we need to increasingly treat Cyber Command as a high-demand, low-density resource, where we have to acknowledge there's not enough capacity to do everything we want." So, we need a prioritization of a risk-based model about how we're going to allocate our capabilities. We've got to continually reassess this, just like we do with ballistic missile defense, with ISR [Intelligence, Surveillance, and Reconnaissance], with SOF [Special Operation Forces] forces. We shouldn't be viewed any differently.

So, we put a new process in place. I just made an argument, and was granted authority, to reallocate some of our capability against some of the challenges you've already talked to me about within the last 40 minutes or so. That didn't exist—a year ago, that process didn't exist. It wasn't envisioned. The thought was the cyber forces that we had created would be permanently aligned. I argue that's not just going to—there's just not enough. It's not going to get us where we need to be.

Senator FISCHER. Do you see that increased focus on a high-end fight—is that primarily going to impact the training, or is it going to impact operations?

Admiral ROGERS. It's probably a combination of both. I don't necessarily view it as a binary——

Senator FISCHER. Either/or.

Admiral ROGERS.—one or the other. The positive side—you know, as I said, I've been in command almost 4 years. In those 4 years, I haven't run into a situation where we didn't have some level of capacity and expertise—or some level of capability or expertise. The challenge is capacity. It's, "Okay, I can deal with this in a reasonable level of places, but if I get into something larger, that becomes a challenge."

Now, no one should think for one minute—I am proud of the capability Cyber Command has, and I am confident in our readiness to execute our mission, even as I acknowledge that there's challenges.

Senator FISCHER. Okay. When you—when you're talking about capacity, you're building a 6,200-strong Cyber——

Admiral ROGERS. Right.

Senator FISCHER.—Mission Force.

Admiral ROGERS. Sir.

Senator FISCHER. How adequate do you believe that force is going to be compared to the threat that we're seeing today?

Admiral ROGERS. So, that was based on an assessment—boy, it's almost 10 years ago now, when we did the groundwork about, what do we think the structure——

Senator FISCHER. But, that hasn't really changed.

Admiral ROGERS. No. So, what we said was, "Let's build the force out." So, as I said, we'll complete the buildout by the end of the fiscal year. The argument I'm trying to make now is, "So based on the 8 years of actual runtime, that suggests to me that the way that we've structured some of the teams, I would like to change." I told the Services, "I will leave this alone until you complete the mission generation." But, what that—once that's done, I'd like to retool this a little bit, because I think we can take advantage of the lessons of the last 8 years. I think it also argues, we're probably going to need some level of additional capacity over time. That's something I'll be talking to my successor about. I think that's going to be a key thing for him during his time as—in command.

Senator FISCHER. It seems like we—we hear this over and over again, a lot of the same challenges. I realize the NDS is out now, and it's presenting us with a strategy. But, it's frustrating sometimes, on our side, that—I don't know if we're seeing much progress.

A last question for you. I was a little confused by an earlier statement, so I wanted to clarify that. You have testified, in the past, that you do not support creating a special corps or service focused on cyber.

Admiral ROGERS. Yes, ma'am, that's true.

Senator FISCHER. Okay. Thank you very much.

Senator INHOFE. Thank you.

Senator Blumenthal?

Senator BLUMENTHAL. Thank you, Mr. Chairman.

Admiral, thank you for your service. We will miss you, as others have said.

Have you read the Special Counsel's indictment against 13 Russians and several Russian entities?

Admiral ROGERS. I haven't read the actual indictment. I've seen the media reporting on it. I haven't seen the actual indictment.

Senator BLUMENTHAL. Well, I recommend that you do so, sir, with all due respect. For us, as Americans, it is an incredibly chilling, absolutely terrifying account of an attack on our democracy. You refer to it as a series of actions that, "threaten the foundations of our democracy." I think that's a very polite way of putting this act of warfare. In fact, the Russians themselves refer to it as informational——

Admiral ROGERS. Informational.

Senator BLUMENTHAL.—warfare. That's from them, not from us. So, I feel a sense of urgency about this ongoing warfare against our democracy that I feel, so far, is not reflected in the response from our Department of Defense. That's one of the reasons why Senators Nelson and Shaheen and I wrote to the Secretary of Defense last week and asked for engagement of Russian cyber operators and disruption of their activities. I understand from you that your feeling is, you have not been given authority to take additional action. That's correct.

Admiral ROGERS. Sir.

Senator BLUMENTHAL. Have you asked for that authority?

Admiral ROGERS. No, I have not. I've tried to act within the authority that has been granted to me to be aggressive.

Senator BLUMENTHAL. Why have you not asked for additional authority?

Admiral ROGERS. Because I guess my sense right now is, I'm not sure that the capabilities that I have would be the optimal or only response to this. I think we need to——

Senator BLUMENTHAL. It may not be the only response——

Admiral ROGERS. If I could—I apologize.

Senator BLUMENTHAL.—but wouldn't you agree that it is a necessary response?

Admiral ROGERS. It could be a part of a response. I would certainly acknowledge that. I just think we need to step back and look at this very broadly. Because one of the arguments, not just the—this current piece, but others—is, "Be mindful of falling in the trap that, just because someone comes at us in cyber, that we have to default to immediately going back and doing the exact same thing." I've—and just have—I've always believed we need to step back and think a little bit more broadly about it, and just don't default. It's because of that, you know, that I have not done that, to date.

Senator BLUMENTHAL. Well, for how long, with all due respect, are we going to step back and look broadly at this ongoing attack? I mean, literally last week, in the wake of the Parkland shooting, the bots, the fake accounts, again and again, disrupting, sowing discord, continuing to attack our democracy in ways that most Americans should find absolutely intolerable, may I suggest that seeking that additional authority perhaps is appropriate at this point?

Admiral ROGERS. Sir. Again, much of what you're asking me—I'm an operational commander, not a policymaker. That's the challenge for me as a military commander.

Senator BLUMENTHAL. Wouldn't you agree with me that the President himself is aware of these attacks and should give you that additional authority?

Admiral ROGERS. I think the President is certainly aware. Sir, I am not going to tell the President what he should or should not do. I'll use my chain of command to make my recommendations to the Secretary as to, "Hey, sir, hey, within the DOD mission set and within the responsibilities that you have allocated to the Cyber Command, here's what I think we can and should do."

Senator BLUMENTHAL. Well, without belaboring this point, would you agree with me that the Russians have been in no way deterred from——

Admiral ROGERS. Oh, yes, sir, I think that's true.

Senator BLUMENTHAL. They're doing it with impunity. They could care less what we think. They're continuing to attack us.

Admiral ROGERS. Yes, sir.

Senator BLUMENTHAL. So, thus far, the response of the United States of America to this ongoing attack has been completely inadequate to——

Admiral ROGERS. It hasn't changed the calculus, is my sense. It has not——

Senator BLUMENTHAL. It has not changed the calculus——

Admiral ROGERS.—changed the calculus or the behavior on the part of the Russians.

Senator BLUMENTHAL. It hasn't changed their behavior.

Admiral ROGERS. Right, that's my sense.

Senator BLUMENTHAL. They have paid no price for meddling in 2016 election or——

Admiral ROGERS. They haven't paid a price at least that's sufficient to get them to change their behavior.

Senator BLUMENTHAL. Well, they haven't paid any price, so far as I can see, have they?

Admiral ROGERS. You could argue some of the sanctions that were—that have been imposed—you could also argue some of the indictments—again, I don't think it's fair to say nothing has been done, although, again, you're getting way outside my lane as an operational commander, sir.

Senator BLUMENTHAL. But, it has been completely inadequate so far.

Admiral ROGERS. It certainly hasn't generated a change in behavior that I think we all know we need.

Senator BLUMENTHAL. Thank you, Mr. Chairman.

Senator INHOFE. Senator Hirono.

Senator HIRONO. Thank you, Mr. Chairman.

Admiral Rogers, I do join my colleagues in thanking you for your service, not only in Cyber Command, but also your 37 years of service in the military.

You have been asked a number of questions about the Russian interference with our elections and questions about who's in charge. You testified that Department of Homeland Security is the sector lead on combating Russia's—countering Russia's efforts to

tamper with our elections. Now, it seems, to me anyway, that perhaps Cyber Command has the best resources and best equipped to actually do something in this area. You are the operational person. But, you don't have specific authority from the President or the—or anyone else, for that matter, to go forward. Now, you did also indicate that you are—I believe you used the word "constant contact" with Department——

Admiral ROGERS. I said "regular." I said——

Senator HIRONO. Regular.

Admiral ROGERS.—I interacted with them——

Senator HIRONO. Regular——

Admiral ROGERS.—regularly.

Senator HIRONO.—contact with Department of Homeland Security. The sense that we have—I have—is that the—that I wonder what the Department of Homeland Security, which is charged with countering the Russian interference with our elections—what they are doing. So, since you are in regular contact with Homeland Security, what have you advised DHS to do in this area to counter Russia's interference with our election——

Admiral ROGERS. What have I advised DHS to do in the execution of DHS's mission? That's not really——

Senator HIRONO. Yes. Have you given them any advice?

Admiral ROGERS. That's not really my role, ma'am.

Senator HIRONO. No, but you are in constant contact. What are you in constant——

Admiral ROGERS. So, we talk about——

Senator HIRONO.—regular contact about?

Admiral ROGERS.—"Tell me what you're doing. Tell me how you're organized. What are the capabilities that Cyber Command, for example, could support you with?" Those are the kinds of discussions. I also make sure the information flow, "Are you getting the benefit of the insights that we're generating"——

Senator HIRONO. So——

Admiral ROGERS.—"based on actions that we have taken?"

Senator HIRONO. So——

Admiral ROGERS. Those are the kinds of——

Senator HIRONO.—with regard to those kinds of conversations, then is Homeland Security doing what they need to be doing to counter Russian interference, continuing interference with our elections?

Admiral ROGERS. You need to talk to them, ma'am. I don't have full knowledge of everything the Department of Homeland Security is doing here. Therefore, it would be——

Senator HIRONO. Yes, I understand that.

Admiral ROGERS.—it would be an ill-formed opinion——

Senator HIRONO. I get that.

Admiral ROGERS.—on my part to assess their performance.

Senator HIRONO. So, I'm trying to get at—with all the resources and the awareness that you have, what kind of specific advice you have given to Homeland Security, because we do not get the impression that they are doing what's adequate to—definitely to counter anything that the Russians are doing, certainly not to the point where they will stop doing it.

Admiral ROGERS. Right.

Senator HIRONO. So, I hope that, at some point, in some other committee or in this committee, we'll be able to ask those kinds of questions of the Homeland Security Secretary, because what they're doing to—with our elections does have an impact on national security. As you say, they are seeking to undermine our institutions.

I would also like to join Senator Ernst in her focus on the Department of Defense fully utilizing the cyber capabilities of our Reserves and National Guard. That's just a statement, and I think you concur with that.

As you leave your command, I am wondering, what would be your suggestion that your successor, you know, focus on as he or she—it'll probably be a he—take over Cyber Command? What are the things that you would want the new person to focus on?

Admiral ROGERS. So, "You're in"—this is what I would say to the individual, assuming the nominee is confirmed, "You're inheriting a structure that reflects choices we made 8 to 10 years ago. We need to step back and ask ourselves, 'Is the structure optimized for today and tomorrow?' How do we take the lessons of the last 8 years, where we've done a whole lot of activity on the defense, in the offense, working with the private sector? There are insights there that I think we can harness to look at, 'How do we evolve the structure?'" I'd also argue, we need to step back—and you have raised this with me already this morning—how do we better work the DOD role and the defense industrial base and the cleared defense contractors? We've got to get a different dynamic here. We've got to look at that differently. Then, more broadly, Cyber Command—and again, it goes to some of the points you've raised—Cyber Command, in its role, partnering with others, how do we do this in a much more integrated way? That'll be something that I hope maybe I can continue to provide opinions on in my next life.

Senator HIRONO. Yes, how to get an integrated structure for speed and agility. So, you have different departments: DHS, FBI, Treasury. Who should take the lead in creating this integrated structure?

Admiral ROGERS. Well, that's, you know, clearly the role of the administration within the executive branch. That's their task. I know they're working their way—again, DOD, we're going to support this. There's an ongoing review right now on this same question. So, we'll see what comes out of that.

Senator HIRONO. Is there something that Congress can do to enable one entity, one of these agencies, to take the lead in integrating our structure?

Admiral ROGERS. I'd—you know, I'd prefer to give the executive branch a chance to say, "So, tell me what you think the plan is." Now, I—I'm not trying to minimize the role of the Congress. Please, Senator, that's not what I'm trying to say.

Senator HIRONO. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Heinrich.

Senator HEINRICH. Thank you, Mr. Chairman.

Admiral Rogers, this committee has long expressed concern about the lack of an effective doctrine to help deter cyberattacks before they happen. The Fiscal Year 2018 NDAA specifically di-

rected the development of a national cyber doctrine. Why don't we have one yet? We've been talking about this for years.

Admiral ROGERS. Right. So, I don't want to speak for others. I flat out can't tell you why. The point I'm trying to make, as the Commander, is, "Hey, we need this," that there would be value, not just for Cyber Command, not just for the Department of Defense, but for the Nation as a whole. As I've said, there is an ongoing effort right now. I hope this is going to generate some of the points that you make. I think it's frustrating to all of us. It's not because of willful ignorance or neglect or negligence, but we clearly haven't put ourselves where we need to be.

Senator HEINRICH. Is it even possible to achieve cyber deterrence when we don't have some sort of public-facing articulated cyber doctrine that gives our enemies pause?

Admiral ROGERS. Well, I think deterrence has multiple components, from capabilities to a sense of, you know, what we can and can't do, and what we will and won't do. So, I would also argue, Let's not think of what——

Senator HEINRICH. So we have some inherent deterrent——

Admiral ROGERS. Right.

Senator HEINRICH.—value in our capabilities.

Admiral ROGERS. Yes, sir.

Senator HEINRICH. If we had an articulated doctrine——

Admiral ROGERS. That would also help——

Senator HEINRICH.—that drew some—you know, that pointed out that there would be consequences, would that increase our deterrent ability?

Admiral ROGERS. I think that would increase it, but I also—the—I apologize—the other point I wanted to try to make was: But don't think a strategy, in and of itself, is the panacea. I think——

Senator HEINRICH. Sure.

Admiral ROGERS.—it's an important——

Senator HEINRICH. Yeah.

Admiral ROGERS.—component of where we——

Senator HEINRICH. Absolutely.

Admiral ROGERS.—where we need——

Senator HEINRICH. We need tools.

Admiral ROGERS.—to be, but it's the tools and the underpinning, as well. Once you get that framework, then it's, "So what do you do to actually get to actionable outcomes?"

Senator HEINRICH. So, right now, as my colleagues pointed out, the Russian state continues to use bots, they continue to——

Admiral ROGERS. Right.

Senator HEINRICH.—use trolls and other, basically, information warfare tools to sow division in this country——

Admiral ROGERS. Yes, sir.

Senator HEINRICH.—to sow doubt. Has our response been adequate to create any sort of visible deterrence to those activities?

Admiral ROGERS. It clearly has not changed their calculus. It's not changing their behavior.

Senator HEINRICH. I think that draws just sort of a fine point on—we need to be doing everything we can right now to increase that deterrent value, because it's not being effective.

Let's take a hypothetical for a moment. Tomorrow, there's a nation-state cyberattack against our power and energy sector. It results in power outages, it results in oil and gas pipelines shutting down. Take a moment and assume that the other decisionmakers, folks at DHS as well as the administration, are in agreement that this is a hostile nation-state attack, and who it's coming from. The White House wants to respond in the cyberdomain immediately. Without talking about what that looks like, are you ready?

Admiral ROGERS. It—there are so many variables in what you—so, who's the actor? What kind of capability was used? What specifically are we looking to defeat or overcome? It's one of those—I apologize——

Senator HEINRICH. Are you confident in your tools and your team to be able to respond immediately?

Admiral ROGERS. It—the tools are optimized for specific actors and specific—and again, I apologize, I don't want to get into the specifics of——

Senator HEINRICH. I don't want to give you specific actors, but you know——

Admiral ROGERS. Right. But, the capabilities are optimized for specific actors and specific configurations, in many ways. So, there are so many variables—the other thing in all this is, you know, time. It's one of the reasons why I think we've got to get a much more integrated day-to-day approach to this. Because one of my challenges is: Look, my experience as a military commander teaches me, doing discovery learning while I'm moving to contact—I'm being told, "Hey, I want you to forestall the following adversary." If the first time I've dealt with this potential adversary is in the scenario you've outlined, then I'm doing a lot of discovery learning as I'm going to contact. That's——

Senator HEINRICH. Let's make——

Admiral ROGERS.—not optimal.

Senator HEINRICH.—the assumption that it's somebody we've been planning for for a——

Admiral ROGERS. Right.

Senator HEINRICH.—long time.

Admiral ROGERS. Then that's a little different scenario. Again, it depends on the——

Senator HEINRICH. You mentioned——

Admiral ROGERS.—specifics, but——

Senator HEINRICH.—a few in your——

Admiral ROGERS. Yes, sir.

Senator HEINRICH.—initial testimony.

Admiral ROGERS. That there are capabilities for us.

Senator HEINRICH. Okay.

You have talked for years about, sort of, your top three cyber concerns: critical infrastructure, data manipulation, and attacks from nonstate actors. Just quickly, compare how you think we're doing on those three, versus how you viewed them, from a risk point of view, when you first took this job. How has it changed?

Admiral ROGERS. So, first, critical infrastructure. There's greater recognition of the problem set, which is good. I'm not spending a lot of time, now, saying, "Hey, this is something we need to be focused on." But, I would still argue it's uneven. Some segments,

very advanced, doing some great work. Other segments, not so much.

The second area was—I apologize—was data manipulation. My argument would be—"Boy, are you watching that unfold now in the world around us?" It goes to the influence piece. I would argue that has gotten worse, because now you've got a major actor, and they're not the only ones, in the form of the Russians, who—now it's a conscious part of their strategy, and they're doing it on a regular basis. So, there I would argue we've gotten worse.

The third was——

Senator HEINRICH. Nonstate actors.

Admiral ROGERS.—nonstate actors. That one, that surprised me a little bit, in the sense that, while I've—and I'm not talking criminal, because I would argue criminal activity is still the greatest single segment of activity, from a threat basis, within the cyberspace arena. That has not taken off quite as much as I thought it would, to be honest.

Senator HEINRICH. I'm over my time. I apologize, Mr. Chair.

Senator INHOFE. Senator Kaine.

Senator KAINE. Thank you, Mr. Chair.

Admiral Rogers, thank you so much for your service and your multiple appearances here.

I was interested that, in the aftermath of the announcements by Director Mueller of indictments of 13 Russian individuals, two Fridays ago, that the President tweeted out—and I'm just going to use his words; I normally wouldn't use these words, but—and I'm going to quote him. He said Russia is, "laughing their asses off." He also said that "Russia has succeeded beyond their wildest dreams."

I think this is going to be chapter in our life where we're going to just have to acknowledge we've been humiliated as a country. Our democracy has been humiliated. We've had our pocket picked. We've lost what may be, you know, the first real cyber war that our Nation has been in. You can characterize it a lot of different ways, but I think it's going to be characterized as a chapter of failure. The U.S. Government failed to protect the U.S. democracy.

I want to ask you, based on your lengthy experience in this position, but really your lengthy experience in service to the country, where is the source of that failure? Was the failure a failure of imagination? Was it a failure of will? Was it a failure of policy? Was it a failure of structure? Was it a failure of personnel? Was it a failure of leadership? Was it a failure of investment? Was it more than one of those things? We can learn from failure, and we should, so that we——

Admiral ROGERS. Right.

Senator KAINE.—can improve. But, I think the history of this, especially the 2016 election, which has now led to 19 indictments or guilty pleas by individuals, and another three indictments or pleas by entities. It's going to be viewed as a chapter where the U.S. Government failed the U.S. democracy. I want your best professional judgment, in what may be your last appearance before the committee in this particular role, as where the source of that failure is, so that we can fix it.

Admiral ROGERS. So, I don't think there's one single source of failure, but I'll share some thoughts with you.

So, first, one of the things that's always struck me is, we—if you go back several years, we tended to define "critical infrastructure" from a very Industrial Age approach. Hey, does it produce a product or service, an outcome? So, for example, using that methodology, we didn't say to ourselves, our electoral process is a critical infrastructure product. Because we're thinking, there's no product or service, so to speak, that it tangibly generates. I mean, there's votes and outcomes. So, the first thing I was struck by is, we need to rethink what does critical infrastructure really mean to us in this Digital Age that we're living in?

Secondly, I think—you know, I—again, I've been in the job for a while. I've been in that part of multiple administrations. I think the thought initially was, "We'll go to them, we'll tell them we have awareness of what we're doing, and this will convince them—and we'll take some initial steps, and we'll convince them that they should stop."

Senator KAINE. Underestimating an adversary.

Admiral ROGERS. Right. That clearly has not happened. I don't think we anticipated how—what level of sustained aggressive behavior we were going to see over time, that this wasn't viewed as a one-off, "Hey, it was just about one particular election, one particular outcome," that clearly we're looking at a nation now who views this as a strategic imperative over time for them, that there's value to be achieved in continuing to do this. I don't think we necessarily initially looked at it that way.

Then, the final thing that comes to my mind is—and it's symptomatic of cyber as a whole—what do you do when we're dealing with a challenge that crosses so many different lines? So, as I said, in our structure, elections are a State process. Cyber capability—DOD, DOJ, DHS—that's the executive—that's not State, that's a Federal and it's an executive branch. You look at capability in the private sector, how do we—one of my takeaways is, cyber is going to force us to think outside the traditional lines that we use in assigning—in defining problems and aligning resources.

Senator KAINE. Let me ask you one more question. I was a mayor and a Governor. Why should mayors—local officials or State officials today believe that the United States Government will protect the United States democracy in future elections? Because, as I talk to Governors and local officials, they have very grave doubt whether the Federal Government will act in any way to protect the electoral system from attacks such as those that Russia conducted in 2016. Tell them why they should have confidence that the United States Government will——

Admiral ROGERS. Well, first, I don't interact with them, but, as a citizen, my attitude would be, "Look, I hope one of your takeaways is, here, while the system is imperfect and clearly has not achieved the outcomes we want, it is not because there aren't motivated, hard-working individuals trying to do things." That, hopefully, as you've said, you know, we want to be a learning, adaptive nation, here, where we learn and change over time. That's what I'm hoping we're going to see in the coming months and years ahead of us. Because this is not a, "All we've got to worry about is—we'll deal with this in 6 months or a year." That's not the way this is going to work, I don't think.

Senator KAINE. Thank you, Mr. Chair.

Senator INHOFE. Senator McCaskill.

Senator MCCASKILL. I'm going to try to—I know this ground has gone—been gone over, but—first of all, thank you.

Admiral ROGERS. Yes, ma'am.

Senator MCCASKILL. You've been terrific. I'm a big fan of the work you've done.

But, I'm going to try to channel a woman who came up to me at the grocery store not too long ago. She asked me a simple question: "Is Russia at war against our democracy?" What would you have said to her in the grocery store?

Admiral ROGERS. I—well, a war is, by definition, as a specific legal document aspect to it. I'm not a lawyer. What I would probably say to her is, "There shouldn't be any doubt we are in a competition with these guys, and they are trying to use every tool they have to gain advantage. Some of that advantage they want to gain is by undermining our very institutions."

Senator MCCASKILL. That's a lot of words. I said, "Yes."

[Laughter.]

Admiral ROGERS. So——

Senator MCCASKILL. I said, "Yes."

Admiral ROGERS. I like to talk to people. I apologize.

Senator MCCASKILL. I mean, I've just got to tell you, they came after our democracy.

Admiral ROGERS. Yes, ma'am.

Senator MCCASKILL. I can't imagine anything more essential to the United States of America than our democracy. So, the next question she asked me, "Are we strong enough and smart enough that we can keep them from doing this again?"

Admiral ROGERS. Yes.

Senator MCCASKILL. Okay. So, then the next question she asked me—I said the same thing—the next question she asked me, "Are we doing that right now?"

Admiral ROGERS. We're taking steps, but we're probably not doing enough.

Senator MCCASKILL. Okay. So, she wants to know, and I want to know, why the hell not?

Admiral ROGERS. Ma'am, I'm not——

Senator MCCASKILL. What's it going to take?

Admiral ROGERS. I'm an operational commander, ma'am. You're asking me a question that's so much bigger than me. I don't—I'm not trying to duck this. I'm trying to say, Here's what my role is. You're——

Senator MCCASKILL. It's a problem——

Admiral ROGERS.—asking me something that's——

Senator MCCASKILL.—it's a problem, Admiral.

Admiral ROGERS. Oh, I don't deny that——

Senator MCCASKILL. It's a problem.

Admiral ROGERS.—for one minute.

Senator MCCASKILL. You know, the notion that this country came after the essence of what we are—the character and value of our country is all about the democracy—the notion they came after us, brazenly, and that nobody can sit in that chair and say, "We

got this"—you guys can do this. You give America's military a mission, and nobody is better.

Admiral ROGERS. Right.

Senator MCCASKILL. The notion that you have not been given this mission to stop this from happening this year is outrageous. It is outrageous. There's no question that they know we're not coming after them. Frankly, your response to Senator Reed's question about Cyber Command disrupting their interference, you said, "We have chosen not to engage in the same behavior as Russia." But, defending is not the same behavior as Russia. Preventing and deterring is not the same behavior. They came after us. We're not asking you, "Are you going after them?" We're asking you, "Have you the authority, have you the command to stop them from doing this again to the—us in 2018?"

Admiral ROGERS. I cannot operate out of the DOD information network, ma'am, on a daily basis. I do not have the authority to do that. I don't have the legal authority to defend a State's voting infrastructure——

Senator MCCASKILL. Well, I'll tell you, Admiral Rogers, if there—if you don't have the authority to defend our voting structures, then we've—we've got the ability to fix that. Correct? I believe, Mr. Chairman and Ranking Member, we have the ability to fix the law to give you the authority to protect our voting systems. Because I guarantee you, the Secretary of State of Missouri doesn't have an ability to go after Russia.

Admiral ROGERS. Right. Yes, ma'am

Senator MCCASKILL. I mean, they could harden, but they can't go after them. The only entity that can go after Russia is the United States military. That's the only one. The fact—I mean, effectively—I mean, maybe Department of Homeland Security can help around the edges, but their primary mission is not to go after a foreign nation. It is, in fact, to protect the Homeland.

Admiral ROGERS. But, again, I would argue, think—respectfully, think beyond just cyber and responding in kind. There's a whole—economic, politi-—there's a whole breadth of tools that we could potentially apply here to try to shape the Russians' behavior and their choices. I would just urge us, "Don't default to, We've got to go after them in cyber." I'm not arguing that cyber isn't a potential part of a broader strategy. I'm not trying to say that——

Senator MCCASKILL. I just never thought I'd——

Admiral ROGERS.—for one minute.

Senator MCCASKILL.—see the day—honestly, I never thought I'd see the day that Russia would go after the heart of our country.

Admiral ROGERS. Ma'am.

Senator MCCASKILL. Ever. That we would be sitting here parsing words about whether or not we've got this. I want somebody with your experience and your courage and your tenacity—I want somebody to sit in that chair and say to the United States of America, "We've got this."

Admiral ROGERS. Ma'am.

Senator MCCASKILL. Until we have that moment, Russia is winning. That is disgusting.

Admiral ROGERS. Yes, ma'am.

Senator MCCASKILL. Thank you, Mr. Chairman.

Senator INHOFE. Senator King.

Senator KING. Thank you, Mr. Chairman.

Guess what question I'm going to ask?

[Laughter.]

Admiral ROGERS. Yes, sir. Would this be a Russian—associated with Russia?

Senator KING. It would be. A deterrence-related question.

Admiral ROGERS. Yes, sir.

Senator KING. On December 23rd of 2016, the Congress passed the National Defense Authorization Act. In it was a section that required the Secretary of Defense to file a report, on just the questions we've been talking about, within 180 days, which was June of 2017, about the definition of a "cyberattack," what would be the response. It talks about operational authorities—what operational authority is delegated to the United States Cyber Command for military cyber operations, how the Law of War applies, the whole—a whole list. The purpose of the amendment, which was in the law, which is in the law, was to establish a clearly articulated doctrine of response in this kind of situation. I'm asking you, as an operator, have you been asked—have you been tasked with drafting any part of the response to this requirement, which——

Admiral ROGERS. I've been——

Senator KING.—by the way, is now in——

Admiral ROGERS. I've been part of the——

Senator KING.—month eight?

Admiral ROGERS.—part of the dialogue about responding, particularly on the operational piece of this, in terms of overall responsibility. This is—the Office of the Secretary of Defense has the responsibility for——

Senator KING. But, I'm asking, is anybody——

Admiral ROGERS.—replying——

Senator KING.—working on this? We're 8 months in—we're 8 months late now.

Admiral ROGERS. I apologize. I don't know the specifics of the timeline for——

Senator KING. But, were you given a deadline, saying, "We need this by June of"——

Admiral ROGERS. I was——

Senator KING.—"2017?"

Admiral ROGERS.—part of this. I don't remember—I honestly don't remember if we were given a—can I take this one as a—an action to——

Senator KING. Yeah, but here's——

Admiral ROGERS.—get back——

Senator KING.—here's what's frustrating, is—Here we are, still talking about this issue, when the Congress made a specific instruction to the Secretary of Defense, and the President, by the way, was then required to respond to the Congress within 180 days from that report that should have been coming in June of 2017, hasn't come. So, you know, we're way late, and we——

Admiral ROGERS. Yes, sir.

Senator KING.—keep talking about this. You and I have been in probably a dozen or 15 hearings on this, and we don't seem to be any further ahead than we are—were before. The problem, as

you've testified today, and I think quite accurate and repeatedly, until we have some clearly articulated doctrine of response to these kind of attacks, they're going to continue. If all we do is try to patch our software——

Admiral ROGERS. Right.

Senator KING.—they're going to continue. You know that, and I know that. What's it going to take? Is it going to take the destruction of the electric grid or the financial system in order for us to finally get to the point of taking this seriously?

Admiral ROGERS. Like I said, sir, there is an ongoing—I'm—and I'm participating in this. I just—apologize—I just don't know the specific timelines here. I'm——

Senator KING. Yeah. I'm not—I understand you're an operational guy, but you have to understand our—you're the nearest thing that we have——

Admiral ROGERS. I've got it. I know my——

Senator KING. You're lucky enough to be here today. But, this is serious business. And——

Admiral ROGERS. Yes, sir.

Senator KING. And—well, let me turn to some—a little more specific question that I think underlines what we're talking about here. What would happen today if you, on your way back to your office, got a call and said the U.S. financial system has been taken down, all the computers on Wall Street are off, the markets are in chaos? I don't mean from a policy point of view. I'm——

Admiral ROGERS. No, no.

Senator KING.—talking about——

Admiral ROGERS. In terms of——

Senator KING.—what would be the execution? Who's in charge? What would the results be?

Admiral ROGERS. So, DHS would have overall responsibility for the provision of Federal support in response to this. My role would be: help to make sure I understand, number one, who was the actor. So, can we identify who did this? Because if I'm going to respond, I have to know who I'm responding to or what I'm responding to. So, one of my first questions, as Cyber Command, would be, "Let's make sure we understand what's the characterization of activity, who's the actor, what did they do——"

Senator KING. Who would take the lead? Who's in charge?

Admiral ROGERS. "—how did—" DHS would have overall responsibility.

Senator KING. DHS would be in charge?

Admiral ROGERS. Sir.

Senator KING. Do—have you—do you—have you war-gamed this?

Admiral ROGERS. Yes, sir. In fact, I made it a broad reference it—the finance sector, for example, the scenario you posture here, I've—we've actually undertaken some very good tabletops, specifically, as I reached out to DHS and the financial sector. "Look, we have got to get down execution-level work here, team." So——

Senator KING. Well, that's—and you——

Admiral ROGERS.—we have done——

Senator KING.—repeated talk about integration. What worries me is that—whether anyone is in charge. I guess a followup is: Do

we have a serious red-team, war-game process to be sure we're not surprised about how to react when one of these things happens?

Admiral ROGERS. I don't know if I'd use the phrase, "We have a serious red team." Do I—is this part of our mission responsibility? Yes. Is this something we train and exercise against? Yes. Is this something we continually assess, looking for indicators of this type of activity before it occurs? Yes.

Senator KING. Well, I want to thank you. This may be our last——

Admiral ROGERS. Sir.

Senator KING.—time to talk about this. Thank you for your service and your straightforward response, always. Just leave you—and you know, I hope, as you leave this job, you will leave a memo behind that says, "We are not adequately prepared. We need a doctrine. We need it to be publicly available. We need our adversaries to know that, if they strike us in this realm, they're going to be struck back." It may not be cyber. I mean, as you say——

Admiral ROGERS. Right. Sir.

Senator KING.—it may be a whole range of things. But, right now, we are not—we have not done that. I deeply hope that this is something you can take on as a kind of exit interview.

Admiral ROGERS. Sir.

Senator KING. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Tillis.

Senator TILLIS. Thank you, Mr. Chairman.

Admiral Rogers, thank you for being back before the committee.

Could you just give me a brief description, in your tenure in the current role, where you think things have got—tell me the positive things that have occurred and the things that you wish you had made more progress on in your time in the Command.

Admiral ROGERS. So, the positive thing, among the things that jump out at me, it's cyber's integration with other operational commands, particularly CENTCOM, SOCOM, some things we're doing out in the Pacific with Pacific Command. That has been a real strength. It's something I really—I knew it was a good day when you have those commanders publicly talking about what Cyber Command is doing. It's not Cyber Command talking about, "Look at all the great cyber things we're doing. Shouldn't you like what we're doing?" That's been a real process.

Some of the command-and-control structures—JTF Ares that we put in place. How do you build a structure designed to integrate capability so we can generate effects against ISIS—was a slow start, because we were starting from ground zero, but it has really taken off. That has worked out very, very well.

The campaign planning in the structure, from a planning perspective, that we've put in place, particularly that's been a focus for us over the last calendar year, that—oh, that's just some great work. That really sets the foundation for the future and gets cyber into a much more traditional, "Hey, look, we're no different in our mission set than CENTCOM is in what they're—in terms of the mechanisms and the framework they're using to plan, or what European Command is doing." That's a real positive.

If I ask myself, "What are the areas where I would?" The force generation. I mean, we're going to beat the timeline for FOC. That took a lot of work by a lot of people. The areas where I—were not as far along as I wish we were, tool and capability development and who's going to do what. We've still got to work this out between, What's the role of the Services and what's the role of the Command? You have give us—the Congress has given us some acquisition authority. We've started down that road. I think that's a real positive. But, we've got to ask ourselves, So what's the future here?

Senator TILLIS. Do we have the timelines on acquisition right with the nature of the developing technology? In other words, are we compressing the time to new capabilities to a point that you feel comfortable?

Admiral ROGERS. So, we're—we're never where we want to be. But, I like the fact that there's been recognition, we need to do this outside the traditional acquisition framework, which was really built to generate these capital-intensive capabilities that take a decade to develop. That's not our model. That is not what we need. So, I like the recognition of this. It's an area the Secretary's asked me to take a look at over time, so this will be something I'm going to comment on before I leave. I've got some thoughts I want to share on this before I leave.

Senator TILLIS. How well have you done on personnel recruiting and retention?

Admiral ROGERS. So, if you look at a uniform——

Senator TILLIS. As chair of the Personnel Subcommittee, I'm——

Admiral ROGERS. Right.

Senator TILLIS.—particularly interested in other things that we should be doing as we look at the NDAA specifically around personnel issues.

Admiral ROGERS. So, if you look on the uniform side, I'd say we're probably exceeding our expectations. It doesn't mean that it's perfect. The biggest challenge for me in the 4 years has been less the military uniformed component, and the civilian piece is proving to be harder. Retention, recruitment—part of it also now is the process. When it comes to the military, we've got a lot of people coming to us, many of whom have skills that I can apply in cyber. In the cyber world, it's much more about going out and trying to find people with the right skills. It's a little different dynamic, and so, the civilian piece has probably proven to be harder.

Senator TILLIS. Well, that's something that we're always interested in, in things that we can do to make that easier. It's very——

Admiral ROGERS. Yes, sir.

Senator TILLIS. I can't imagine how you compete with the likes of the firm that I worked with on recruiting and retaining——

Admiral ROGERS. Right.

Senator TILLIS.—some of the top talent. I could go and fill the new capability in 3 months that you could take 3 years to do. I think that we have to continue to look at that. These highly talented people——

Admiral ROGERS. Right.

Senator TILLIS.—want an environment where they're moving at the pace of the threat, and that's the last thing.

Since the time you started this role, how would you describe the number and the nature of threats that you're dealing with today versus when you began?

Admiral ROGERS. State actors have gotten more aggressive, not less aggressive. The breadth of capability in many states that are of concern to us is growing. You can look at the level of—I mean, we publicly talk about Russia, China, Iran, North Korea—you look at the level of investment they are making, it is significant.

Senator TILLIS. How well—last question—how good have you gotten at knowing what we don't know? I've talked about this before——

Admiral ROGERS. Right.

Senator TILLIS.—in prior committee hearings, the latent capability. There are a lot of people who express frustration because, when we see malign behavior on the part of, maybe, a state actor or some other organization, the idea is to go out with some sort of a proportionate response in the cyber world. The thing that concerns me with that is, we really don't know what we don't know about latent capabilities that could ultimately brought—be brought back to us. Are we at a point where we have any better or more holistic idea of what the latent threats are out there——

Admiral ROGERS. I mean, we're——

Senator TILLIS.—in private sector or with——

Admiral ROGERS. Right.

Senator TILLIS.—whole-of-government?

Admiral ROGERS. I mean, we're better. But, on the other hand, just as a broad——

Senator TILLIS. They're better, too.

Admiral ROGERS. Right. Just as a broad operational principle, one of the team—one of the things I constantly tell our team is, "You must assume we have imperfect knowledge, and we must be capable of acting on imperfect knowledge." So, don't come to me, telling me, "Hey, we think we totally understand." I—just my experience—teaches me, it doesn't always work that way.

Senator TILLIS. Well, thank you. Again, encourage you to get any feedback to the committee staff——

Admiral ROGERS. Sir.

Senator TILLIS.—in my office on anything that we can do, at least on the recruiting-and-retention piece for any resources going into the NDAA.

Admiral ROGERS. Yes, sir.

Senator TILLIS. Thank you for your service.

Senator INHOFE. Thank you, Senator Tillis.

Let me just make one comment here before going on to Senator Peters.

I was thinking, all during this, less than complimentary comments have been made. I just returned, last night, from 12, 13 days in PACOM. Everyone from Admiral Harris, Shaunessy, all the rest of them, I've talked to, all the way around to and including on the DMZ [Demilitarized Zone], between South and North Korea. So, all the principals there. I have to say to you—and this is at PACOM—they are very complimentary of the work that you've done and the progress that you've made.

Senator Peters?

Senator PETERS, Thank you, Mr. Chairman.

Admiral Rogers, wonderful to have you——

Admiral ROGERS. Senator.

Senator PETERS,—here again. I'll join in saying thank you for your service. We're going to miss you. It's been great having you before this committee, and I've appreciated your attention to this issue, and personally talking to me about a variety of——

Admiral ROGERS. Sir.

Senator PETERS,—issues, as well.

I'd like to talk a little bit more about the future of warfare and the future of technology. There's been some questions related to machine learning and artificial intelligence, which is going to change everything, not just in the military space, but in the commercial side. I am on the Commerce Committee, and we recently had a hearing on artificial intelligence and how that's going to change business and commercial activities, in general. I asked one of the leading executives at one of the leading technology companies in the country, "What did he fear most about artificial intelligence?" We had a hearing primarily of all the positive aspects of it, but I asked him, "What did he fear?" I was actually surprised by his answer. He said his fear was the manipulation of elections and the manipulation of public opinion that can undermine democracy, which I thought was a very interesting response from a leading tech company.

I wanted to ask you a bit about that in the Department of Defense, and, more broadly, our posture when it comes to investing in these technologies, and how are we working to increase innovation and work with those commercial companies to integrate it into defense systems? I guess I'll ask you that question, as well. What do you fear—if we don't get this right, what is our fear of an adversary acquiring machine learning and AI [Artificial Intelligence] systems in advance of our own capabilities?

Admiral ROGERS. From a military's perspective, my concern is, you potentially lose speed and knowledge. That's a terrible combination as a warrior. Like, speed and knowledge are advantages for us, historically. One of my concerns is, if we're not careful, AI potentially gives opponents speed and knowledge better than ours, if we're not careful. I'm not arguing that's going to happen, but I acknowledge we've got to look at it.

What was—I apologize, Senator—what was the——

Senator PETERS, That's all right. That's—and I guess I want to pick that up, because this technology is moving through the commercial side even——

Admiral ROGERS. Right.

Senator PETERS,—faster than through the military side. So, it—in the past, oftentimes military research would be a leading factor. That's not necessarily the case here at all. I'm worried, in particular, about our adversaries that are able to come in and actually buy those technologies, particularly from startup companies.

Admiral ROGERS. Right.

Senator PETERS, I'm working right now in trying to fill some of the gaps on the CFIUS process, which is the

Committee on Foreign Investment in the United States.

Admiral ROGERS. Sir.

Senator PETERS, You basically have foreign entities that buy companies, perfectly legal, get that information, and they use it not just for commercial applications, but also figure out ways to——

Admiral ROGERS. Right.

Senator PETERS,—weaponize that type of technology, as well.

So, my question to you is, "How can we better integrate the missions of CYBERCOM and the NSA as to it relates to this CFIUS review process?" Are you concerned about it? What should we be doing to make sure that we are protecting this intellectual capital that has significant national defense potential?

Admiral ROGERS. I'm not concerned about the review process, in terms of NSA role and Cyber Command. Again, it's one of the advantages of—we are so physically colocated to each other.

My bigger concern goes to what you've already said. CFIUS, to me, is a reflection of an environment of the past, not today in the future. It is very clear to me that some nation-states have spent a lot of time studying this CFIUS process, and have developed strategies to overcome it, "Hey, I don't have to worry about buying a corporation outright, it's—so tell me what your overseas subsidiaries are, and tell me what your providers are, tell me who else has access to this intellectual property, so to speak. I'll acquire that." Things like that, I'm going—CFIUS is not set up to—it wasn't what we built it to do. So, I applaud your efforts to—we need a different construct. Not—we don't want to get rid of CFIUS, but I need—I think we need to think about it more broadly, about the national security challenges of foreign investment in areas with national security implications for us.

Senator PETERS, Is there a role for CYBERCOM to be more actively involved in some of that process, providing information? I mean, you'll be aware of what's happening, things that you're concerned about, but how——

Admiral ROGERS. Right.

Senator PETERS,—how do you see a potential role there, if any?

Admiral ROGERS. I think it's much more an intelligence—so, my role in—on the NSA side, because we're tasked with generating knowledge and insight, is much greater. Cyber Command helps feed—feed that effort, because one of the things we do is, we generate knowledge and insight on the Cyber Command side, based on what we're doing. We're putting out reporting, so that goes into the broader effort. But, it's not a primary mission for Cyber Command. It's much more a primary mission on the NSA side.

Senator PETERS, Great. Thank you for your testimony. Appreciate it.

Senator INHOFE. Senator Warren.

Senator WARREN. Thank you, Mr. Chairman.

Admiral, thank you for your——

Admiral ROGERS. Ma'am.

Senator WARREN.—37 years of service. I——

Admiral ROGERS. When you say that, I just feel——

[Laughter.]

Senator WARREN. No, no, you should feel proud. Feel strong.

You know, you probably picked up on a theme today, that this committee feels a sense of urgency about the Russian threat to our elections. This is not a personal criticism of you.

Admiral ROGERS. No, I understand.

Senator WARREN. We're frustrated that this administration has not lived up to its responsibility to do something about the Russian cyber action.

Now, you told Senator Blumenthal and Senator McCaskill that not every cyberattack requires a cyber response. So, I'd just like to follow up on that just a little bit here.

The Pentagon's Cyber Security Strategy says—and I'm going to quote it to you—"In response to certain attacks and intrusions, the United States may undertake diplomatic actions, take law enforcement actions, and consider economic sanctions." So, I want to focus for just a minute on that last piece, sanctions.

Congress overwhelmingly passed a law last year that, in part, required sanctions on individuals and companies that knowingly engage in malicious cyberactivities on behalf of the Russian Government. Those sanctions include freezing access and restricting travel. The Trump administration has not imposed these required sanctions.

Admiral Rogers, I know that this is not your primary responsibility——

Admiral ROGERS. Yes, ma'am.

Senator WARREN.—to impose the sanctions, but I want to ask a different question. What message does it send to Vladimir Putin that the United States has not fully implemented sanctions to counter known Russian cyberattacks?

Admiral ROGERS. You know, more broadly, the—not just the sanctions, but more broadly—my concern is, I believe that President Putin has clearly come to the conclusion, "There's little price to play here"——

Senator WARREN. Bingo.

Admiral ROGERS.—"and that, therefore, I can continue this activity."

Senator WARREN. Yes.

Admiral ROGERS. Everything, both as a director of NSA and what I see on the Cyber Command side, leads me to believe that, if we don't change the dynamic here, this is going to continue, and 2016 won't be viewed as something isolated. This is something—will be sustained over time. So, I think the challenge for all of us is, So what are the tools available to us? As the strategy says—diplomatic, economic, some cyber things—there are tools available to us. Again, I think, in fairness, you can't say nothing's been done. But, my point would be, it hasn't been enough.

Senator WARREN. It hasn't been enough.

Admiral ROGERS. Clearly what we've done hasn't been enough. And——

Senator WARREN. That's right.

Admiral ROGERS.—you know, I'm mindful of my role as an operational commander, but——

Senator WARREN. Yeah. No, I appreciate that. It hasn't been enough. It doesn't do us any good to have tools in the toolbox if we don't pick them up and use them. You know, Russia will keep trying to interfere in our elections. If the Trump administration doesn't fully implement sanctions, then we're not using every tool

we can to effectively deter Russia from undermining democracy in the future.

Let me ask you one other question, if I can, Admiral. It's clear that the United States needs to step up its cyber game. I want to follow up on a question from Senator Tillis. We've previously discussed the question of how to build a skilled cyber force. You said that improving DOD's network defenses and building a cybersecurity culture depends on our ability to attract the most talented people out there. This committee is now considering reforms to the Defense Officer Personnel Management Act, or——

Admiral ROGERS. Right.

Senator WARREN.—DOPMA, another one of our great acronyms—love to talk about DOPMA—which governs how we recruit and retain our military officers. So, with that in mind, Admiral, if you could make just one change to DOPMA to help attract the right technical talent for the cyber jobs of tomorrow, what would that be?

Admiral ROGERS. I'd want to make—within a military——

Senator WARREN. Yes

Admiral ROGERS.—construct—and, to be honest, we use the phrase DOPMA, because "DOPE–MA"——

Senator WARREN. Okay.

Admiral ROGERS.—sounds terrible.

Senator WARREN. I always think——

Admiral ROGERS. In a military standpoint, it would probably be—and the Services are working their way through this, but I think we want to make sure that we have got a mechanism for a professional cyberforce across a career, that this can't be viewed as something we do—"Hey, we give you training, you do it for a few years, you go do something else, you know, then we bring you back, then you're gone again." That's not going to get us where we need to be. The Services are all—because they do man, train, and equip—you know, they provide capability that I, as a joint—and that includes people and other things—but that I, as the joint commander, then harness to achieve specific mission outcomes as a joint commander. That would probably be the biggest thing.

Senator WARREN. Okay. It's actually very helpful to know. I know that the 2017 defense bill gave the Pentagon a lot of flexibility in how to recruit, but I remain concerned that our recruiting system is so focused on recruiting for the military of today that we're not effectively targeting the best talent and best-suited talent to execute the missions we will face tomorrow. How we think about that, I think, is really important.

Admiral ROGERS. Ma'am.

Senator WARREN. So, thank you again. Thank you for your service, and thank you for your help.

Admiral ROGERS. Thank you, Senator.

Senator WARREN. Thank you, Mr. Chairman.

Senator INHOFE. Thank you.

It's the Chair's intention to go ahead and close the meeting after a few remarks from the Ranking Member. Is there objection to that?

[No response.]

Senator INHOFE. All right.

Senator REED. Thank you very much, Mr. Chairman.

I have just very specific points I want to clarify.

First, there are ongoing Russian direct or inspired cyberoperations against our electoral system, as we speak?

Admiral ROGERS. Yes, sir.

Senator REED. Yes.

Admiral ROGERS. Yes, sir. I'm speaking more as NSA than as Commander——

Senator REED. Right.

Admiral ROGERS.—of Cyber Command, but yes, sir.

Senator REED. Two, with the authority or the direction of the President of the United States, National Mission Teams can disrupt these attacks at the point of origin. Is that correct?

Admiral ROGERS. We could be tasked to do that. Again, it depends on the specifics. I don't——

Senator REED. But, it's legal?

Admiral ROGERS.—want to overpromise——

Senator REED. It's legal, and it can be done.

Admiral ROGERS. Sir.

Senator REED. Have you been asked to make a recommendation to—with respect to deploying these teams?

Admiral ROGERS. No, but I've certainly provided my—nobody's necessarily directly asked me—I certainly have provided my opinion in ongoing discussions——

Senator REED. What is your——

Admiral ROGERS.—about this.

Senator REED.—opinion?

Admiral ROGERS. Again, my comment has been: Be mindful of just defaulting to the cyber piece, here. I'd like us to think about this a little bit more broadly, and I'd like us to think about how does this potential cyber piece that Cyber Command could play—how does it fit into something broader?

Senator REED. So, let's just conclude. You have not been formally asked for a recommendation.

Admiral ROGERS. No, sir.

Senator REED. You have expressed your opinion to the Secretary of Defense and to the White House about the possible uses of this, but not in any formal way.

Admiral ROGERS. Yes, sir. I haven't put anything in writing, for example.

Senator REED. I guess, final point. This goes—do you feel, as a professional officer, you have an obligation to make a formal recommendation to this? Have——

Admiral ROGERS. I feel that the system provides me the opportunity to provide my recommendation, to provide my insights, to provide my opinions, that people listen to what I have to—I acknowledge there's other opinions out there. I acknowledge there's other perspectives. But, I feel very comfortable in the fact that there's a—been a dialogue on this topic, and that dialogue continues.

Senator REED. Thank you, Mr. Chairman, very much.

Thank you, Admiral.

Senator INHOFE. Thank you.

Thank you, Admiral, for your straightforward answers and for the—your patience on this, perhaps your last event here.

We are adjourned.

[Whereupon, at 11:15 a.m., the committee was adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR DAVID PERDUE

EFFICIENCIES IN CYBER TRAINING AND NETWORKS

1. Senator PERDUE. Admiral Rogers, in 2013, the Secretary of Defense directed the standup of the Cyber Mission Forces and provided funds for CYBERCOM and the service cyber components to establish teams and fund the training of personnel and units. Between 2013 and 2016, under your (CYBERCOM's) supervision the Office of the Secretary of Defense and the Joint Staff were supposed to come to an agreement on a joint, federated training program funded by the services for the training of the Cyber Mission Force (CMF). This federated training program was supposed to be an equitable division of labor that avoided duplication and built on the expertise of each service. Last year, I sponsored language in the NDAA that noted this committee's concern that the Services were not able to come to an agreement for this joint training program in time for last year's budget submission, and flagged this issue as a priority for the DOD to address. Can you update me on the status of that agreement on a joint training program for the Cyber Mission Force?

Admiral ROGERS. The Senate Report to S. 1376, "urges the Department of Defense to create a federated and joint training model and discourage having each service build separate training capabilities for its cyber contingent." The Cyber Force Model Implementation Tiger Team (CFMITT), led by the Joint Staff, produced a Training Transition Report signed January 19, 2017. The CFMITT worked with USCYBERCOM to ensure that services will leverage respective centers of excellence and avoid duplication efforts. The transition plan made the recommendation to migrate to a hybrid model of centralized governance and decentralized execution of courseware. This model best leverages service strengths (and core roles) in training cyber forces using established training capability and capacity while ensuring a common training standard that meets USCYBERCOM's operational needs for the Cyber Mission Force.

This transition is currently underway. The service cyber components have provided their transition plans to USCYBERCOM, and initial funding has been provided to each service to begin the transition. Training funding will be fully allocated to each service beginning in fiscal year 2019.

2. Senator PERDUE. Admiral Rogers, can you elaborate on CYBERCOM's new Joint Force Trainer role that has been specified in the Unified Command Plan (released last November)?

Admiral ROGERS. [Deleted.]

3. Senator PERDUE. Admiral Rogers, do you believe this Joint Force Trainer role fulfills the 2013 requirement?

Admiral ROGERS. Yes. As the approved CMF Training Transition Plan sets the conditions for the CMF, the JFT role will complement that plan with joint standards for the remainder of the JCOF. With USCYBERCOM's new JFT responsibilities and authorities, the command will establish training and certification standards for the cyberspace workforce, including personnel that secure, operate or defend and protect DOD, CCMD and U.S. cyberspace resources.

4. Senator PERDUE. Admiral Rogers, do each of the services maintain the same standards for cyber warriors?

Admiral ROGERS. There is one joint standard for training. USCYBERCOM promulgates those training standards as the Joint Force Trainer (JFT). Upon graduation from their service feeder schools, cyber personnel enter the Cyber Mission Force (CMF) Training Pipeline. This pipeline outlines USCYBERCOM's joint training requirements for individuals based upon their specific work role in the CMF. After individuals complete their training pipeline, CMF teams conduct collective training as a unit to demonstrate specific task proficiency; these tasks are outlined in the USCYBERCOM Training and Readiness Manual. Joint training standards are applied to all services to ensure that each team member in an assigned role is trained to the same level and standard.

5. Senator PERDUE. Admiral Rogers, we're in a fiscal environment where we simply can't afford waste and a security environment where we can't afford our services being out of sync on this critical issue. What synergies can be achieved by joint training? Will we avoid duplication and waste doing so?

Admiral ROGERS. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR KIRSTIN GILLIBRAND

NATIONAL GUARD AND ELECTIONS

6. Senator GILLIBRAND. Admiral Rogers, last year, I included in the defense authorization a provision that would allow for the integration of election-system cyber vulnerabilities in the annual "Cyber Guard" exercise. I also required a report back on the exercise and the capabilities the National Guard could provide on elections security. For example, in the last election cycle, at least three states used Guard units to assess their elections systems' vulnerabilities. After all, the National Guard is already part of the national mission and is being trained to that standard, yet also serves the states and can serve under the control of state governors. Do you think that we have sufficiently explored the role of the National Guard in protecting our elections systems to address this gap between where the capabilities lie and who owns the systems?

Admiral ROGERS. One of the top priorities for USCYBERCOM is greater integration of the Reserve Component into our operations. One facet of this integration is understanding and enabling National Guard support to civil authorities during a domestic cyber event of significant consequence. The role for the National Guard in ensuring election systems integrity is an important topic worth examining. In August 2018, USCYBERCOM will conduct a seminar-style exercise bringing together stakeholders to explore election systems. Invitees will represent the whole of nation; including various state, local and tribal governments, OOO, OHS and other interagency partners, as well as various state National Guard participants. USCYBERCOM's concept is to examine voting system vulnerabilities, authorities, countermeasures, threat information sharing, National Guard support and other relevant topics.

7. Senator GILLIBRAND. Admiral Rogers, could the National Guard help address some of the existing gaps in our whole-of-nation approach and serve as a conduit on cyber between state, local and Federal Government as well as the private sector because of its unique authorities?

Admiral ROGERS. Yes, our whole-of-nation approach requires the use of the National Guard and the unique authorities under which its members operate. Future partnerships between USCYBERCOM, the Reserve Component, state local and tribal governments, along with interagency partners, enable these core missions by empowering operations that target the threat outside the United States while allowing law enforcement and state authorities to defend against the threat within the Homeland. Towards that end, USCYBERCOM, OHS and USNORTHCOM synchronize their efforts daily. Furthermore, USCYBERCOM's Cyber Guard exercise has been refocused to be an operational-level exercise. During the Cyber Guard exercise, USCYBERCOM's operations centers will coordinate closely with the National Guard Coordination Center, the DHS National Cyberspace & Communications Integration Center (NCCIC), and USNORTHCOM to refine our whole-of-nation unity of effort to defend the nation's Critical Infrastructure/Key Resources.

MISATTRIBUTION

8. Senator GILLIBRAND. Admiral Rogers, this weekend, the press reported that Russia hacked the Olympics in South Korea and tried to make it look like North Korea had done it. The indictment that the Justice Department issued on February 16 alleged that the Internet Research Agency used VPNs to make it look like it was doing business in the United States. What do these two situations demonstrate to us about how our adversaries can mask their efforts and limit or misdirect attribution?

Admiral ROGERS. [Deleted.]

9. Senator GILLIBRAND. Admiral Rogers, tensions with North Korea are already quite high and mistaken attribution—maybe not in the case of the Olympics, but were this an attack on United States infrastructure—could have significant consequences. For example, some of us have concerns that the new Nuclear Posture Review implies that the United States might use nuclear weapons to respond to a

cyber attack on critical infrastructure. How do we ensure that a situation won't escalate over a misattribution and that we are not manipulated by actors whose goal is to make us to misattribute, possibly with dire consequences?

Admiral ROGERS. [Deleted.]

CYBER WORKFORCE DEVELOPMENT

10. Senator GILLIBRAND. Admiral Rogers, growing the cyber workforce has been the subject of intense interest on this committee, including determining the proper mix of active duty, reserve component (including National Guard), and civilian personnel and how to develop career tracks to recruit and retain cyber warriors. Last year, you and I spoke about whether the Cyber Mission Force were sufficient to meet all of our country's requirements and since then our needs have only grown. As you prepare to leave this position, can you please assess the state of development of the cyber workforce and specifically the Cyber Mission Force, including the question of whether we have enough people in the Cyber Mission Force?

Admiral ROGERS. [Deleted.]

11. Senator GILLIBRAND. Admiral Rogers, what have you seen thus far in terms of recruitment and retention challenges?

Admiral ROGERS. Several ongoing initiatives are occurring within DOD, the Military services, USCYBERCOM and OPM to maintain, retain and recruit a talented cyber workforce, and some challenges are hindering our efforts. Competition and lack of professionalization (not to be confused with professionalism) are the biggest obstacles to identifying, recruiting and retaining qualified cyber operations personnel.

Regarding initiatives, each military service maintains its own initiatives in regards to maintaining cyber talent. USCYBERCOM continues its own efforts to develop and manage a cyber-operations force that meets the missions through the Cyber Workforce Development Framework which is modeled after the five-phase Human Capital Life Cycle Model. OPM, in accordance with the July 2016 Federal Cybersecurity Workforce Strategy, provides guidance to use existing compensation flexibilities to recruit and retain cyber professionals.

Our biggest challenge is competition. Highly qualified cyber professionals continue to be in high demand but low in quantity. Finding potential candidates has been less of a problem compared to our ability to attract them to federal service. Many candidates simply don't have the patience to wait on the federal hiring process, nor do they have the desire to accept lower wages set by federal compensation rules. The Department's new authorities for the Cyber Excepted Service (CES), provided in the Fiscal Year 2016 NOAA and addressed in personnel policies signed in December 2017, are great start to provide recruitment/retention incentives to the civilian cyber workforce. The CES takes elements from the Intelligence Community's Defense Civilian Intelligence Personnel System and is built to champion faster, flexible hiring. Future Target Local Market Supplement pay tables in Cyber Excepted Service will help improve "lower wages" in high demand cyber specialties and in hard-to fill localities, organizations, and grades. Those employees who do join typically do so for altruistic reasons; in order to serve their country and pursue a mission which is unique and important. While these attributes do our civil servants credit, it does not erase the fact they can find patriotic and fulfilling jobs in the private sector-which offer higher wages and competitive benefits.

Another challenge is the professionalization of a "cyber warrior" can be molded from a host of different career fields. From on-net operators, to linguists and operational planners; cyber professionals' career paths are intermingled with other professional specialties. Unlike the intel or the special operations force communities, cyber does not have a well-worn path to career advancement . As such, many in our community feel isolated and have difficulty in seeing advancement within what could be a lifelong profession.

12. Senator GILLIBRAND. Admiral Rogers, this committee is considering reforms to the military's personnel management practices. As we do that, do you think we should separate how we think about the cyber workforce from our approach toward conventional military functions?

Admiral ROGERS. This domain is unique because it impacts our success in other domains, but to treat it too differently would be misguided, as it would diminish the ability to execute operations and create operational outcomes.

13. Senator GILLIBRAND. Admiral Rogers, do you think that we have developed a cyber strategy against which we can build our forces?

Admiral ROGERS. Questions about a cyber strategy are better addressed to DOD. As an operational command, USCYBERCOM's focus over the past five years has been building the Cyber Mission Force. All 133 teams achieved Full Operational Capability.

QUESTIONS SUBMITTED BY SENATOR RICHARD BLUMENTHAL

ATTRIBUTING CYBERATTACKS

14. Senator BLUMENTHAL. Admiral Rogers, in June 2017, Russia's military launched the NotPetya ransomware cyberattacks against Ukraine, but it was not until this month that the United States attributed the attack. Yet this delay in attribution is nothing new, as the United States only attributed the May 2017 WannaCry cyberattack to North Korea in December 2017. Attribution is an important step, but must come far sooner and be followed by swift action. Why are the sources of these attacks not identified to the public sooner? What are you doing to connect the dots at a more rapid pace?

Admiral ROGERS. [Deleted.]

15. Senator BLUMENTHAL. Admiral Rogers, in your testimony you note that "improved attribution is in our strategic interest, but not strictly necessary to guard against many cyber threats." You go on to say, "We do not have to gain positive attribution to each particular actor before we can act to protect ourselves and our allies and partners; in fact, all users must take basic steps to secure their data and systems. We need decisive responses at scale to threats and intrusions. That is where USCYBERCOM finds its mission." What have you done between the NotPetya and WannaCry attacks to decisively respond?

Admiral ROGERS. [Deleted.]

16. Senator BLUMENTHAL. Admiral Rogers, while attribution is important, it is not sufficient. Do you agree that North Korea, Russia, and other malicious actors must pay a steeper price for their cyberattacks? Do you agree that our actions so far have not made them realize that they have more to lose than gain with their behavior?

Admiral ROGERS. Deterrence is partially a function of perception. It works by convincing a potential adversary that it will suffer unacceptable costs if it conducts an attack on the United States, and by decreasing the likelihood that a potential adversary's attack will succeed. The United States must be able to declare or display effective response capabilities to deter an adversary from initiating an attack; develop effective defensive capabilities to deny a potential attack from succeeding; and strengthen the overall resilience of U.S. systems to withstand a potential attack if it penetrates the United States' defenses. In addition, the United States requires strong intelligence, forensics and indications and warning capabilities to reduce anonymity in cyberspace and increase confidence in attribution.

Paying a "steeper price" for cyber attacks is one strategy for impacting the risk versus reward calculus but it must be considered as one component of a full range of options.

COUNTERING RUSSIAN DISINFORMATION CAMPAIGNS

17. Senator BLUMENTHAL. Admiral Rogers, USCYBERCOM's National Mission Teams' mission is to defend the nation from cyberattacks of significant consequence. How can we best use these teams to counter Russia's disinformation campaigns for our elections?

Admiral ROGERS. Defending the nation from cyber attacks of significant consequence is a broad mission set encompassing support to civil authorities and Homeland defense. The National Mission Teams of the Cyber National Mission Force (CNMF) can best be employed as part of a larger whole-of-government response—in understanding vulnerabilities, identifying malicious cyber actors, actions, and activities and sharing information on adversary activities, mitigations and defensive measures.

18. Senator BLUMENTHAL. Admiral Rogers, I agree with your statement in your testimony that Russia's actions "threaten the foundations of democracy." Would you also agree that Russia has not been deterred by our actions thus far? Would you concur with members of the Administration—such as CIA Director Pompeo and Secretary Tillerson—that Russia will continue to seek to meddle in our elections?

Admiral ROGERS. [Deleted.]

CYBER STRATEGY

19. Senator BLUMENTHAL. Admiral Rogers, because the current Administration has yet to articulate a cyber strategy, this Committee required the President to develop a national policy on cyber in the Fiscal Year 2018 NDAA, including how to deter, disrupt, deny, and respond to cyberattacks to improve our resiliency and offensive capabilities. What is USCYBERCOM's role in the development of the President's cyber policy? Please provide a status update on the development of this policy.

Admiral ROGERS. Questions about a cyber strategy are better addressed to DOD. As an operational commander, USCYBERCOM identifies options and recommends courses of action to the SECDEF and President through the Chairman of the Joint Chiefs of Staff. Working through the Joint Staff and the OSD, USCYBERCOM supports the development of national-level strategy and policy.

20. Senator BLUMENTHAL. Admiral Rogers, how do you define a cyberattack? What constitutes an act of war in the cyber realm?

Admiral ROGERS. Whether a particular cyber activity rises to the legal definition of an armed attack or a use of force under international law, or otherwise constitutes an unlawful intervention, is highly fact-specific and is determined on a case by-case basis by our national policy makers. Similarly, the decision to declare an event an "act of war" resides in the hands of elected leaders in accordance with the law.

21. Senator BLUMENTHAL. Admiral Rogers, last month, DOD released its National Defense Strategy. I am concerned that it does not emphasize cyber enough. It notes DOD will "invest in cyber defense, resilience, and the continued integration of cyber capabilities into the full spectrum of military operations." We must send a strong signal to our adversaries that we are serious about addressing this threat. How does the National Defense Strategy inform and strengthen USCYBERCOM's work?

Admiral ROGERS. [Deleted.]

NORTH KOREA CYBER REVENUE

22. Senator BLUMENTHAL. Admiral Rogers, what is USCYBERCOM doing to blind North Korea's cyber capabilities to prevent the regime from continuing to launch offensive cyber operations that provide illicit revenue for their nuclear weapons program?

Admiral ROGERS. [Deleted.]

23. Senator BLUMENTHAL. Admiral Rogers, last week, the Administration announced its largest tranche of sanction designations against North Korea, yet this did not focus on their cyber activity. Do you agree that we must do more to make North Korea pay a steeper price for its cyberattacks?

Admiral ROGERS. This is a decision for our Nation's leaders.

FANCY BEAR TARGETS DEFENSE INDUSTRY

24. Senator BLUMENTHAL. Admiral Rogers, it was recently reported that Russian hacking group "Fancy Bear" targeted 87 United States defense contractors who work on weapon systems critical to our national security. While it is still uncertain what may have been stolen—what is clear is that Fancy Bear continues to target the U.S. with impunity. What should the U.S. be doing to address this intrusion? How do we address the loss of sensitive national security data?

Admiral ROGERS. [Deleted.]

25. Senator BLUMENTHAL. Admiral Rogers, it is reported that as many as 40 percent of the targeted contractors clicked on Fancy Bear's phishing links. How can employers improve their cybersecurity training to ensure their employees do not fall prey to these tactics?

Admiral ROGERS. [Deleted.]

26. Senator BLUMENTHAL. Admiral Rogers, how is USCYBERCOM working with the defense industrial base to prevent and protect against this exfiltration of industry data on our most advanced weapon systems?

Admiral ROGERS. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR TIM KAINE

SHARKSEER

27. Senator KAINE. Admiral Rogers, I'm sure you are aware of the NSA's SharkSeer cybersecurity program, which orchestrates 23 commercial technologies—most, if not all, of which have a large presence in the Commonwealth of Virginia—to provide automated cyber defense for the DOD information network. It is my understanding that since becoming fully operational, SharkSeer has increased DOD detection rates by 886 percent and has discovered over 2 billion unique cyber events. I also understand that SharkSeer's automated means for detecting, analyzing and responding to nation-state cyber events has replaced the need for nearly 90 personnel to generate mitigations; now, only a few personnel are needed to approve automated work flows and interactive mitigations are executed in minutes rather than days—this means that DOD's security architecture is not only more secure, it's also more cost effective. Can you please share your general views on both the efficacy and the cost-effectiveness of the SharkSeer program?

Admiral ROGERS. [Deleted.]

SHARKSEER TRANSFER

28. Senator KAINE. Admiral Rogers, I understand that DOD is planning on transferring the SharkSeer program from the NSA to the Defense Information Systems Agency, though there appears to be a lack of clarity regarding that determination. How do you and the Defense Department intend to continue to support the great strides the SharkSeer program has made?

Admiral ROGERS. DISA and NSA plan to submit a Fiscal Year 2020 Issue Paper to fund the transfer of the Sharkseer (SS) program to DISA. The Fiscal Year 2020 Issue Paper will address: continued sustainment of the current SS system; conducting a technical refresh of the current baseline, while seeking a reduction in sustainment costs; and the evolution of the SS system. DISA will sustain and operate the system, while NSA will conduct the research to evolve SS to combat more threats.

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, MARCH 8, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

UNITED STATES EUROPEAN COMMAND

The committee met, pursuant to notice, at 9:30 a.m. in Room SD–G50, Dirksen Senate Office Building, Senator James M. Inhofe, presiding.

Committee members present: Senators Inhofe, Wicker, Fischer, Cotton, Ernst, Tillis, Sullivan, Perdue, Sasse, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Our meeting will come to order.

The committee meets to receive testimony on the posture of United States European Command, EUCOM. We welcome our witness, General Scaparrotti.

Chairman McCain asked that I submit a statement for the record on his behalf, and read the following excerpt, "The United States faces a new strategic reality in Europe. The first step in addressing it is to recognize the scope, scale, and seriousness of the challenges Russia presents to our national security and to the international order. Then we need to—a coherent strategy and policy to deter and, if necessary, defeat aggression against the United States and our allies. We must be prepared to face the world as it is, not as we wish it to be."

[The information referred to follows:]

PREPARED STATEMENT BY CHAIRMAN JOHN MCCAIN

The United States faces a new strategic reality in Europe. The first step in addressing it is to recognize the scope, scale, and seriousness of the challenges Russia presents to our national security and to the international order. Then we need a coherent strategy and policy to deter and, if necessary, defeat aggression against the United States and our allies. We must be prepared to face the world as it is, not as we wish it to be.

The administration's new National Defense Strategy recognizes this new strategic reality and provides a framework for prioritizing the most complex and dynamic global threat environment since the end of World War II. It identifies long-term

interstate competition with countries like Russia as the primary challenge we face and offers a roadmap for adjusting to this new era of great power competition.

As we decide how to move forward in this new reality, it is important to remember how we got here. Russia's recent investment in military modernization is designed to erode the United States military advantage. Its buildup of troops along its western border is designed to intimidate our allies. Its interference in democracies near and far is designed to undermine our confidence in our own institutions.

Ultimately, each of these efforts is part of Mr. Putin's plan to shift the international order toward authoritarianism and lay the groundwork for future aggression. We cannot let this stand. If we continue to allow Russian provocation—from its invasion of Ukraine to its development anti-access/area denial capabilities in Kaliningrad to its violation of the INF Treaty to its interference in elections—to go unanswered, we are teaching Mr. Putin a very dangerous lesson.

We have finally begun to impose costs on this provocation and work to deter future aggression. Efforts such as congressional support for the European Deterrence Initiative and the administration's decision to provide defensive lethal assistance to Ukraine are significant steps toward developing the right approach to dealing with Russian revanchism and assuring our European allies and partners. I hope this hearing will include a conversation about what kinds of new policies, resources, and authorities would help EUCOM further the recent progress we have made.

Underlying each of these issues is another important reality: no United States policy or strategy in Europe can succeed without a strong NATO alliance. As we adjust to the renewed era of great partner competition and begin to implement the new National Defense Strategy, we must do so in close coordination with our European allies and partners. We should never forget that America is safer and more secure because we work with and through our allies, who are willing to step up and share the burden of collective security.

Senator INHOFE. Your testimony today is extremely relevant as the United States is engaged in a renewed great-power competition with Russia. The National Defense Strategy prioritizes Russia and China. It's been stated, by several of the top people, that we're losing some of our edge that we've had in the past. We clearly see the growing threat that Russia—especially in Europe. Vladimir Putin recently discussed Russia's new nuclear capabilities, including a new ICBM [intercontinental ballistic missile], intercontinental hypersonic missile, nuclear-powered cruise missiles, and undersea drone. This is in addition to Russia's aggressive behavior in Ukraine and the cyber domain.

Then there's China and their militaristic expansion in the Pacific. While this is not part of your AOR [Area of Responsibility], it's one where we—several of us—Senators Ernst and several of us who have just recently visited, we are watching what's going on there. If something should happen in the East China Sea that would draw our assets over, that would have a direct effect on you, General.

This week, we received testimony from the Director of National Intelligence in which he stated, "The risk of interstate conflict, including among the world's great powers, is higher than at any time since the end of the cold war." General Scaparrotti, we ask you to help this committee begin to think through the requirements necessary to implement the new strategy and what resources and authorities you might need that you don't currently have. Thank you very much for attending.

Senator Reed.

STATEMENT OF SENATOR JACK REED

Senator REED. Well, thank you very much, Mr. Chairman.

General Scaparrotti, thank you for joining us this morning, and let me also thank you for your service to the Nation over many

years. Please extend our gratitude to the military men and women and their families under your command for their commitment and service to the Nation. Thank you.

The new National Defense Strategy marks a shift in United States defense priorities from terrorism to the reemergence of long-term strategic competition with near-peer rivals, particularly Russia and China. This morning's hearing is an opportunity to hear from General Scaparrotti on EUCOM's military plans and operational requirements for implementing the new defense strategy within the European theater.

There can be no doubt that Russia poses a serious threat to United States national security, and that our allies and partners are also threatened. We have repeatedly heard from our intelligence leaders, including Director of National Intelligence Coats on Tuesday, that Russia is aggressively confronting the United States and its allies, seeking to destabilize the international order, which President Putin considers contrary to Russia's claim to great-power status. Russia is also seeking to reassert a sphere of influence over its neighbors, and has actively sought to prevent their further integration with Europe.

To advance its strategic interests, Russia is using the full spectrum of capabilities at its disposal, from nuclear and conventional modernization to asymmetric operations below the threshold of direct military conflict. Just last week, President Putin gave to nuclear and conventional saber-rattling in his annual address to the Russian nation.

The Kremlin's hybrid aggression against the West includes deception, information warfare, cyberattacks, political influence, and malign financial influence. Russia is using the war in Ukraine as a test lab for new hybrid warfare tactics, including, as the White House recently confirmed, the Russian military's "NotPetya" ransomware cyberattack against Ukraine. The intelligence community is already warning that Russia has launched an assault on the United States midterm elections this year with even more sophisticated tools than in the 2016 presidential election. General Scaparrotti, we'll be interested in hearing what tasking, if any, you've received from the White House to disrupt or prevent Russian operations aimed at interfering with our democratic institution as well as those of our allies.

Over the last few years, Congress has authorized critical resources to reassure our allies and ensure a credible military deterrent against Russian aggression. The fiscal year 2019 defense budget request includes $6.5 billion for the European Deterrence Initiative, or EDI, to continue to enhance our deterrence and defense posture throughout Europe. The committee is interested in hearing your priorities for EDI for the coming fiscal year.

I commend EUCOM for taking steps to start rebuilding the Command's expertise on Russia to better understand the Russian threat perception and the Kremlin's decisionmaking process. I remain concerned about our naval posture in Europe to counter the Russian threat, and EUCOM's cyber challenge.

The U.S. EDI funding has also been an effective tool for leveraging increased defense spending by our NATO [North Atlan-

tic Treaty Organization] allies, and I hope that will continue at the next NATO summit planned for July in Brussels.

As Supreme Allied Commander Europe, you play a critical role in ensuring that the alliance is prepared to respond in the event of a crisis. In February, NATO defense ministers approved changes to the alliance command structure, including the establishment of a new joint force command for the Atlantic. An area of concern is the ability of the NATO force structure to respond quickly to any early stages of a crisis before NATO reaches an article 5 declaration. I would be interested in your views on whether additional authorities should be delegated to SACEUR to initiate the movement of force as the crisis begins to unfold and before NATO members reach a political decision.

Strategic competition with Russia is but one of the many challenges with the EUCOM theater. Relations with Turkey have been tense due to the instability and violence in Syria and Turkey's decision to buy the Russian S–400 air defense system, which potentially jeopardizes the full range of United States-Turkey defense cooperation. The flow of people seeking refuge across the Mediterranean to southern Europe has strained these nations' security resources and has helped fuel the rise of nationalistic anti-immigrant political parties in some countries. Longstanding simmering resentments in the Balkans risk increased instability in the region.

I look forward to this morning's testimony, and again, thank you, General Scaparrotti, for being here today, and for your service.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Reed.

General, we have—there's another hearing that's taking place at the same time—we have nine members on—of this committee that are also on Environment and Public Works, so you'll see some movement back and forth. Forgive us for that. You are recognized for your opening statement, anything you want. Your entire statement will be part of the record. Try to confine it to around 5 minutes.

STATEMENT OF GENERAL CURTIS M. SCAPARROTTI, USA, COMMANDER, UNITED STATES EUROPEAN COMMAND, AND NATO SUPREME ALLIED COMMANDER EUROPE

General SCAPARROTTI. Thank you, Chairman.

Chairman Inhofe, Ranking Member Reed, distinguished members of the committee, thank you for the opportunity to testify before you today as the Commander, United States European Command.

It's an honor to represent more than 60,000 men and women who are forward-deployed, supporting United States' mission in Europe. Our soldiers, sailors, airmen, and marines, our coastguardsmen and civilian workforce continue to demonstrate selfless service and dedication in an increasingly complex and competitive security environment. Our adaptation to this environment has made significant progress, thanks to the resourcing provided by Congress, particularly under the European Deterrence Initiative. EUCOM deeply appreciates Congress's support for EDI, which has supported the largest reinforcement of Euro-Atlantic defense in a generation.

In this reinforcement, the U.S. has been joined by NATO alliance, which remains a keystone to our national security, as it has

been for almost seven decades. I'm proud to report that the alliance is strong, it is unified, and it's committed to being fit for purpose. Our European allies in Canada have turned a corner on defense spending, with increases in each of the past 3 years. During this time, they've added $46 billion to defense spending, including $5 billion increase from 2016 to 2017. In 2018, eight countries will meet NATO's 2 percent spending target, with at least 15 nations on pace to reach or exceed 2 percent mark by 2024. Backed by these collective commitments, NATO is adapting to ensure its vigilance in peace, responsiveness in crisis, and that it possesses the strategic depth for high-end, large-scale, multidomain conflict.

Together with NATO, the United States has made significant progress, but we have much work to do as we execute our National Defense Strategy dealing in increasingly lethal, agile, and resilient joint force in long-term strategic competition with Russia, and ready to counter violent extremist organizations.

Russia is carrying out a campaign of destabilization to change the international order, fracture NATO, and undermine United States leadership around the world. To this end, Russia is advancing asymmetric capabilities in accordance with its concept of warfare, which envisions the employment of the full spectrum of military and nonmilitary power. Throughout Europe, along its periphery, in the Middle East, and beyond, Russia has demonstrated a willingness and capability to exert influence, spread disinformation, and undermine confidence in NATO. At sea, on land, in the air—frankly, every domain—Russia's increasingly modernized military is operating at levels not seen since the cold war. In response to the challenge posed by Russia's pursuit of power, the United States has increased its posture in Europe by deploying rotational forces, to include an armored brigade combat team, a combat aviation brigade as well. Additionally, we've implemented the Framework Battalion Task Force for NATO's enhanced forward presence in Poland. We have pre-positioned equipment for an additional armored brigade combat team. We have doubled the maritime deployments to the Black Sea. We have exercised theater antisubmarine warfare operations. We have executed bomber assurance and deterrence missions and, for the first time, we've deployed fifth-generation fighters to Europe. The United States has taken these actions in coordination with NATO, which, since the 2016 Warsaw Summit, has made significant gains in meeting its security commitments and in implementing decisions to enhance our collective defense. NATO has implemented its enhanced forward presence with four multinational battle groups, backed by 29 nations. It's also established a tailored forward presence in the Black Sea region. Collectively, this enhanced deterrence posture is necessary to prevent further Russian aggression, preserve stability, and reassure allies and partners.

The second major threat we face throughout the European area of operation is violent extremist groups. Since 2014, Europe has endured 18 major terrorist attacks. While the Defeat ISIS [Islamic State of Iraq and Syria] Coalition, which includes NATO, recovers seized territory in Iraq and Syria, ISIS remains active, and seeks to expand its operations across Europe. EUCOM provides forces for military operations against ISIS, such as Operation Inherent Re-

solve [OIR], and has increased information intelligence-sharing among its United States agencies, international partners, and the private sector. With the EU, NATO, EUCOM—with the EU and NATO, EUCOM supports a trinodal community of action to identify and counter terrorist threats. Also, EUCOM has increased coordination with EUROPOL [European Union Agency for Law Enforcement Cooperation] and INTERPOL [International Police] to thwart terrorist activities.

Our European allies deploy forces worldwide to support United States-led counterterrorism operations, including OIR and Operation Freedom Central, and to conduct national counterterrorism missions. The allies are committed to this fight, and their support is essential to ongoing counterterrorism efforts.

In addition to deterring Russia and defeating violent extremist organizations, EUCOM is working to strengthen strategic partnerships, bolster regional security, and reinforce a free and open international order conducive to our security and prosperity. Thanks to the resources provided by Congress, particularly through the European Defense Initiative, EUCOM has made significant headway in establishing a defense posture that is credible, capable, and relevant to our strategic objectives.

As our National Defense Strategy states, "A strong and free Europe bound by shared principles of democracy, national sovereignty, and commitment to article 5 of NATO's treaty is vital to our security." The servicemembers and civilians at EUCOM stand ready to protect the Homeland, strengthen the alliance, and defend a Europe that's whole, free, and at peace.

Mr. Chairman, thank you, and I look forward to the committee's questions.

[The prepared statement of General Scaparrotti follows:]

PREPARED STATEMENT BY GENERAL CURTIS M. SCAPARROTTI

INTRODUCTION

Mr. Chairman and distinguished members of this committee, thank you for the opportunity to testify before you as the Commander of the United States European Command (USEUCOM). It is an honor to represent the more than 60,000 men and women who are forward-deployed supporting our USEUCOM mission. Our soldiers, sailors, airmen, marines, coast guardsmen, and civilian workforce continue to demonstrate selfless service and dedication in an increasingly contested and complex security environment, both in Europe and around the globe. We greatly appreciate the continued support of this committee.

The Trans-Atlantic alliance is a keystone of our national security. USEUCOM, fully aligned with the National Defense Strategy (NDS), supports each of the President's four National Security Strategy (NSS) objectives by strengthening and safeguarding this alliance. Europe provides essential strategic access in support of United States global operations to protect the Homeland and the ability to pursue potential threats to their source. As our most significant trading partner, Europe is vital to promoting American prosperity. The North Atlantic Treaty Organization (NATO) enables us to preserve peace through strength as alliance unity fundamentally deters the aggression of potential adversaries. With shared history and values, Europe is also a critical partner in advancing American influence throughout the world.

There are real threats, however, to United States interests in Europe and to Israel (which also falls within the USEUCOM area of responsibility). These threats are trans-regional, multi-domain, and multi-functional. Additionally, the speed, complexity, and breadth of new threats and challenges are increasing.

USEUCOM continues to adjust to this dynamic strategic environment, aggressively adapting our thinking and approaches to meet our assigned missions. In

doing so, the Command's focus has shifted from engagement and assurance to deterrence and defense. USEUCOM has adapted its plans, posture, activities, and strategic communications to shape the operational environment and prepare forces to respond to crisis at speed. In all these efforts, we are guided by Secretary Mattis's direction to sharpen our military edge, expand the competitive space with Russia, and provide a combat-credible military force to deter war and protect the security of our Nation.

Our adaptation to the new European security environment has made significant progress thanks to the resourcing provided by Congress, particularly under the European Deterrence Initiative (EDI). USEUCOM deeply appreciates Congress' support for EDI, which remains crucial to preserving peace and stability in Europe. We have accomplished much, but we have much work to do to support an increasingly lethal, agile, and resilient Joint Force in long-term, strategic competition with Russia and in combat with violent extremist organizations.

USEUCOM STRATEGIC ENVIRONMENT

Russia

Russia continues to destabilize regional security and disregard international norms, which have preserved the peace in Europe since 1945. Russia seeks to change the international order, fracture NATO, and undermine United States leadership in order to protect its regime, re-assert dominance over its neighbors, and achieve greater influence around the globe. To achieve these ends, the Kremlin is prepared to employ the full spectrum of Russia's power, to include forcefully using its increasingly capable military. Russia has demonstrated its willingness and capability to intervene in countries along its periphery and to project power—especially in the Middle East. Additionally, Russia aggressively uses social media and other means of mass communication to push disinformation, test the resolve of the United States, and erode our credibility with European partners.

The Russian military is improving and modernizing its capabilities, enhancing its ability to be a more agile force capable of executing operations across the entire spectrum of modern warfare. Moscow's strategic armament program has led to increased defense spending with an estimated investment of $285 billion in modernization from 2011 through 2020. Russia continues to modernize its nuclear forces and to develop and deploy long-range, precision-guided conventional weapons systems. In the Baltic and Black Sea regions, and in the Eastern Mediterranean, Russia is expanding its anti-access area-denial (A2/AD) capabilities threatening freedom of movement to our land forces, our ships, and our aircraft. In the maritime domain, Russia is making rapid progress with its new Severodvinsk nuclear attack submarine, more capable Kilo submarines, and Kalibr cruise missiles. Russia continues to hold snap exercises and to limit transparency of planned exercises. Additionally, Russia continues to intercept our routine reconnaissance flight operations over the Baltic and Black Seas, flying dangerously close to our aircraft and occasionally causing unsafe conditions for our pilots operating in international airspace.

Along with military modernization, Russia is advancing its indirect and asymmetric capabilities in accordance with its concept of warfare, which envisions the coordinated use of military and non-military elements of national power to shape the strategic environment. Throughout Europe, Russia exercises malign influence to disrupt and attempt to fracture NATO, undermine trans-Atlantic cohesion, and erode democratic foundations. Russia interferes in the electoral process across numerous states, including supporting a plan to violently disrupt elections in Montenegro, the newest member of NATO. Russia works to influence the geopolitical environment through the use of key acquisitions, proxies, and other agents of influence. Using indirect action, particularly against countries along its periphery, Russia seeks to use information operations and cyberspace operations to manipulate and influence the information domain and to shape a narrative of its choosing.

Russia's strategy of malign influence also includes prolonging unresolved conflicts across Europe and Eurasia. In Ukraine, Russia continues to train and equip proxy forces in the east and refuses to implement its commitments to the Minsk Agreements. As part of Russia's effort to destabilize Ukraine, the Russian military launched the destructive and costly NotPetya cyber-attack in June 2017. Russia maintains its presence in Moldova, preventing a resolution of the conflict in Transnistria. Russia stations roughly 5,000 troops in Armenia and sells weapons to both Armenia and Azerbaijan despite ongoing tensions over the Nagorno-Karabakh conflict. In Georgia, Russia maintains 7,000 troops in South Ossetia and Abkhazia and has recognized both regions as independent states with military, economic, and social linkages to the Russian Federation, despite the fact that Georgia, supported by the international community, has opposed this recognition. In Bosnia and

Herzegovina, Russia uses relationships with the leadership of Republika Srpska to undermine the state institutions established by the Dayton Accords.

The threat from Russia is not limited to the European theater but extends all along its periphery and beyond. Russia is exerting its influence in the Middle East, where its intervention in the Syrian civil war bolstered the Assad regime, enabling the expansion of Iranian influence across the Levant. Russia is also increasing aid to Middle-East states, deepening collaboration with Iran, and extending its influence in Saudi Arabia, Egypt, Libya, and Cyprus. These efforts are changing regional dynamics, adversely affecting Israel's security, stability in Lebanon, and other United States interests in the region.

In the Arctic, Russia is revitalizing its northern fleet and building or renovating military bases along their Arctic coast line in anticipation of increased military and commercial activity. Russia also intends to assert sovereignty over the Northern Sea route in violation of the provisions of the United Nations Convention of the Law of the Sea (UNCLOS). Although the chances of military conflict in the Arctic are low in the near-term, Russia is increasing its qualitative advantage in Arctic operations, and its military bases will serve to reinforce Russia's position with the threat of force.

Our highest strategic priority as a Combatant Command is to deter Russia from engaging in further aggression and exercising malign influence over our allies and partners. In accordance with the NDS, and thanks to Congressional support, we are working to create a combat-credible posture in Europe that will underpin our deterrence. We are updating our operational plans to provide military response options to defend our European allies against Russian aggression. Finally, we are increasing our efforts to counter Russia's malign influence in Europe and compete below the level of armed conflict. This includes supporting the Russian Information Group (RIG), an interagency effort to counter Russia's propaganda and misinformation campaigns.

To effectively expand our competitive space with Russia we must have a whole-of-government approach that employs all elements of our national power. Visible political, economic, and military commitments are critical in deterring Moscow while reassuring allies. Continued Congressional support is essential to our Nation's ability to successfully compete with Russia over the long-term, shore up the international order, and preserve European security.

Violent Extremist Organizations and Terrorism

Violent extremists remain a significant threat to our allies and partners throughout the Euro-Atlantic. Decentralized transregional terrorist organizations thrive in the security vacuums of failed states. Additionally, violent extremists continue to pose a threat to United States personnel, our allies, and our infrastructure in Europe and around the globe.

As coalition actions recover ISIS-seized territory in Iraq and Syria, ISIS remains active and seeks to expand its operations across Europe. ISIS operatives and sympathizers are targeting European citizens for radicalization and recruitment. In cyberspace, ISIS reaches across geographic boundaries to entice new followers, direct acts of terrorism, and spread their extremist ideology.

USEUCOM works directly with our European partners and our Combatant Command counterparts to identify and counter threats to the United States and United States interests. USEUCOM provides forces for military operations against ISIS, such as Operation Inherent Resolve (OIR), in the Middle East. In addition, we continue to increase information and intelligence-sharing among United States agencies, international partners, and the private commercial sector. We also continue to pursue radicals in the digital domain where they are able to hide and recruit others. These efforts help close the seams exploited by terrorist networks and link global counterterrorism efforts to reduce the Homeland's vulnerability to terrorism emanating from Europe and to reduce the terrorist threat to our allies.

Coordination among NATO, partner nations, and international organizations such as EUROPOL and INTERPOL is central to defeating VEOs. For example, information sharing and coordination with the International Criminal Police Organization (INTERPOL) has assisted investigations in more than 80 countries to date. Our EU, NATO, and USEUCOM-shared Tri-nodal Community of Action targets existing VEO networks and facilitates expanded intelligence and law enforcement information-sharing.

European allies provide essential strategic access for United States, allied, and coalition counter-terrorism operations in the AFRICOM and CENTCOM Areas of Responsibility (AOR). The United States depends on countries in the USEUCOM AOR to grant overflight and use of host-nation facilities in countries where we do not have permanent basing. U.S. facilities in the USEUCOM AOR are not sovereign

U.S. territory, and therefore basing and access permissions to conduct operations from these facilities are subject to limitations in bilateral agreements with host-nations. In addition to providing critical strategic access, European allies deploy forces worldwide to support United States-led counter-terrorism operations, including OIR and Operation Freedom's Sentinel (OFS), as well as to conduct national counter-terrorism missions. Allies are committed to this fight, and their support is essential to our ongoing counter-terrorism efforts.

Deterring Russia and defeating violent extremist organizations constitute USEUCOM's two main priorities. Supporting these main efforts, within the NATO alliance and throughout the AOR, we are working to strengthen strategic relationships, bolster regional security, and reinforce a free and open international order.

NATO

NATO allies are adapting to new strategic realities, recognizing their need to remain fit for purpose. They are making significant gains in meeting their security commitments and implementing decisions made at the 2014 Wales and 2016 Warsaw Summits. Latvia, Lithuania, and Romania have joined the United States, Greece, Poland, Estonia, and the United Kingdom in meeting NATO's 2 percent defense spending target, and by 2024, 15 allies are expected to reach or exceed the 2 percent guideline. Additionally, in 2018, 22 NATO members will meet the 20 percent target for defense expenditures devoted to investment in major equipment and related research and development. We have now seen three consecutive years of growth among European allies and Canada, adding approximately $46 billion (USD) to defense.

Another aspect of burden sharing is contributions to operations, missions, and other activities. Germany, Canada, and the United Kingdom serve as Framework Nations for NATO enhanced Forward Presence (eFP) battle groups in Lithuania, Latvia, and Estonia respectively. The United Kingdom, Romania, and Croatia contribute forces to the United States-led eFP battle group in Poland, and Italy is the Framework Nation for the 2018 NATO Very High Readiness Joint Task Force brigade. Allies are committing personnel to fill gaps in the Resolute Support Mission and Kosovo Forces (KFOR). Nations are also adding capabilities and skills in cyber, joint effects, and asymmetric action to remain relevant to the changing character of warfare in the new strategic environment. Allies are also working together to ensure the credibility and readiness of our nuclear deterrent, which requires continued commitment and investment.

Given the realities of this strategic environment, the alliance has undertaken a NATO Command Structure Adaptation (NCS–A) effort. The new NCS design will account for the complexity stemming from the interrelation of crises and threats, the emergence of new warfare domains, the speed and breadth of combat action, and the requirements for the timely fusion of information and decision-making from the tactical to strategic levels. Proposed changes include increased manpower at command headquarters for situational awareness, planning, and targeting capabilities, a third Joint Force Command focused on the Atlantic maritime space, and a Joint Support and Enabling Command to facilitate multi-directional force maneuver and support in conflict. Combined, the proposed organizations, enablers, and processes will improve the capability and capacity of the Alliance for vigilance in peace, responsiveness in crisis, and strategic depth in a large-scale, multi-domain conflict.

USEUCOM is supporting NATO's augmentations in deterrence and defense forces. Since April 2017, USEUCOM's 2nd Cavalry Regiment (2CR), based in Vilseck, Germany, and has fulfilled the United States commitment as the Framework Nation for the NATO eFP battle group in Poland. 2CR will hand off the eFP mission in September 2018 to the 278th Armored Cavalry Regiment of the Tennessee Army National Guard. In the fall of 2017, USEUCOM's 493 Fighter Squadron deployed to Lithuania to conduct the NATO Baltic Air Policing mission. In addition to operational deployments, we are contributing to NATO defense and operational planning in such areas as NATO operational fires, integrated air and missile defense (IAMD), and hand-over/take-over between U.S. and NATO headquarters. Finally, USEUCOM support to the NATO exercise program includes leading the planning for United States participation in the Trident Juncture 18 exercise in Norway scheduled for late October 2018. Approximately 30,000 U.S., allied, and partner nation personnel are expected to participate in Trident Juncture 18.

With the close support of other Geographic and Functional Combatant Commanders, the Joint Staff, the Services, and the Missile Defense Agency, USEUCOM and its Service components are augmenting NATO's Ballistic Missile Defense. The implementation of European Phased Adaptive Approach (EPAA) Phase 3 will increase NATO's strategic depth. Recent multi-national deployments in support of Op-

eration Active Fence in Turkey, and NATO's ongoing development of complementary BMD capabilities demonstrate clear progress on a combined IAMD architecture.

To enhance freedom of movement in the European theater, USEUCOM has formulated a military mobility strategy that will enable United States and Allied forces to respond to crises at speed. We have leveraged Armored Brigade Combat Team (ABCT) and Combat Aviation Brigade (CAB) rotations to refine our understanding of the requirements and timelines for Joint Reception, Staging, Onward Movement and Integration (JRSOI) of forces deploying into the theater. Through bilateral and multilateral key leader engagements, we have encouraged our European allies to address policies and procedures that impede freedom of movement.

USEUCOM complements its support to NATO with bilateral partnership and capacity building efforts with allies and partners. In fiscal year 2017, USEUCOM conducted over 2,500 military-to-military engagements, including over 700 State Partnership Program events in 22 countries, and under section 1251 authority, USEUCOM trained nine allies in 22 exercises. These activities directly support ongoing United States and NATO operations, increase interoperability, promote partner nation integration in the Euro-Atlantic community, and foster relationships that enhance United States strategic access. Our partnership focus helps allies and partners in Eastern and Southern Europe meet emerging security challenges. For example, along with British and German counterparts, USEUCOM implements the Transatlantic Capability Enhancement and Training (TACET) initiative, which synchronizes the contributions of more than a dozen NATO allies in the Baltic states and Poland across the joint, land, air and maritime domains. Additionally, with approximately $35 million of fiscal year 2017 section 333 support and $18 million in fiscal year 2015 State Department Foreign Military Financing (FMF) support, USEUCOM is launching the Georgia Defense Readiness Program this spring. The program will augment Georgia's military readiness and ability to support both national and NATO missions. Through these and other activities, USEUCOM helps to ensure that NATO hones its operational edge that allies meet defense obligations, and that partners are equipped to defend their sovereign territory.

Ukraine

USEUCOM continues its strong support of Ukraine's efforts to build its defense capacity to defend itself from Russian aggression. Following the occupation and illegal annexation of Crimea in 2014 and its invasion of eastern Ukraine, Russia has done little to nothing to implement the commitments it made in the Minsk agreements. Russia remains satisfied with the status quo in the hope that its multifaceted effort to destabilize Ukraine will eventually succeed so that Russia can reassert its sphere of influence. Russia continues to foment the conflict in eastern Donbas, where it arms, trains, leads, and fights alongside Russian-led forces. In Crimea, Russia has increased its post-annexation military posture, forming a new Army Corps with reconnaissance and coastal defense forces and increasing capabilities.

Despite Russia's destabilizing actions, Ukraine is making progress toward its goal to achieve NATO interoperability, but much remains to be done. USEUCOM, working with DOD and the interagency, supports Ukraine's development of capable, accountable, and transparent institutions. The Ukrainian Government recognizes its need to develop a capable, sustainable, professional defense force interoperable with Euro-Atlantic military structures. Ukraine's defense reforms will improve its ability to deter and defend against Russian aggression. The Multinational Joint Commission (MJC) for Defense Reform and Security Cooperation in Ukraine is the primary vehicle for United States and allied security assistance. The MJC meets semiannually with representatives from Ukraine, the United Kingdom, Canada, Lithuania, Poland, and the United States to identify Ukrainian requirements and prioritize training, equipment, and advisory initiatives.

USEUCOM support to Ukraine falls into three broad areas. First, we lead the Joint Multinational Training Group-Ukraine (JMTG–U) program to train Ukrainian forces. Under United States Army Europe and Special Operations Command Europe, the JMTG–U provides individual and collective training to conventional battalions and special operations units within Ukraine's Armed Forces. JMTG–U also supervises train-the-trainer efforts, which will allow Ukraine to assume full training responsibility by 2020. Second, USEUCOM provides recommendations on the utilization of security assistance funds to support Ukraine's self-defense capacity. Since 2014, the United States has provided over $850 million in security assistance to Ukraine through Department of State and Defense authorities. These funds have provided counter-battery radar support, medical assistance, communications, command and control, HMMWVs, night vision devices, and training and advising assistance. The President recently decided to provide enhanced defensive capabilities to

Ukraine, as part of the United States effort to help Ukraine build its long-term defense capacity, to defend its sovereignty and territorial integrity, and to deter further aggression. Third, USEUCOM supports broader Presidential and Ministerial-level reform activity directed at Ukraine's defense institutions.

Balkans

In the Balkans, our command directly supports United States efforts to promote regional stability. USEUCOM is assisting the Kosovo Security Forces (KSF) with implementing its Security Sector Review transformation recommendations. Security cooperation activities include developing English language capability, leadership training, equipment to support the KSF core competencies in search and rescue, explosive ordinance disposal and demining, hazardous material response, and firefighting.

USEUCOM also continues to support the United States contribution of approximately 600 personnel to Kosovo Forces (KFOR). In accordance with the United Nations Security Council Resolution 1244, KFOR's mission is to contribute to the maintenance of a safe and secure environment and freedom of movement throughout Kosovo for citizens of all ethnicities, as well as for NATO and EU personnel. KFOR helps ensure conditions remain conducive for continued EU-facilitated dialogue to normalize relations between Pristina and Belgrade, while Serbia sees KFOR as a way to ensure the security of ethnic Serbs in Kosovo. As a nonpartisan, professional presence, KFOR is essential to the security and stability of Kosovo and the greater region.

In Bosnia-Herzegovina, our security cooperation activities focus on assisting the Bosnian Ministry of Defense and Armed Forces meet NATO standards and interoperability goals, while supporting their aspirations to join the Alliance. Troops from Bosnia-Herzegovina already support NATO operations, such as the Resolute Support Mission in Afghanistan.

EUCOM works closely with interagency partners such as the Departments of Justice, Treasury, Energy, and State to facilitate and enhance support for democratic institutions and processes in the Balkans and to counter malign influence. Balkan nations view the United States as a major supporter of their efforts to develop institutions and processes that promote the rule of law and strengthen governmental systems.

Russia is exerting its influence in the Balkans to prevent individual nations from progressing on a Euro-Atlantic path. We must assist our NATO Allies in the region as they seek to increase their resiliency in the face of Russian malign influence. We must also support our non-NATO partners as they pursue a brighter future as part of the Euro-Atlantic family of nations.

Turkey

Turkey is a strategically for the United States and NATO, a proven enabler for combat operations, and a pivotal player in our long-term competition for a favorable balance of power. USEUCOM actively participates in several ongoing efforts to explore strategic issues and find bi-lateral solutions mutually supporting United States and Turkish interests. Through increased intelligence sharing, continued counter-terrorism coordination, and regular military-to-military dialogue, USEUCOM is committed to strengthening the trust between the United States and Turkey.

Situated within Europe's strategic southeastern security zone, Turkey is a key stakeholder of regional security, stability, and access. Turkey provides the United States with proven logistical support, as demonstrated in Operations Iraqi Freedom, Enduring Freedom, and now Inherent Resolve. Turkey also supports Operation Atlantic Resolve and NATO activities in the Black and Mediterranean Seas, while securing one of the region's most important sea lines of communication through the Turkish Straits.

A major customer of our defense technology, Turkey has 334 open foreign military sales (FMS) cases, valued at over $9.9 billion. These sales are important components of the broad United States-NATO effort to ensure interoperability of equipment and combined training in Western tactics, techniques, and procedures.

Turkey's geographic location also puts it at the crossroads of the theater's two primary security challenges—Russian subversion and the terrorist threat from ISIS. With instability along its southern border and more than 3 million Syrian refugees within its borders, Turkey has been affected by the Syrian war more than any other NATO country. Meanwhile, Russia benefits from political disputes between Turkey and NATO allies that it can exploit to undermine trust and unity. In alignment with the National Defense Strategy's direction to fortify the Trans-Atlantic alliance, USEUCOM will safeguard and strengthen the United States-Turkey relationship.

Israel

The United States' commitment to the security of Israel is unwavering. Our ongoing support and commitment to Israel is focused on enhanced mil-to-mil cooperation to ensure our Israeli partners maintain a qualitative military edge. Israel continues to be the largest recipient of United States foreign aid, and in September 2016, the United States and Israel signed a new Memorandum of Understanding (MOU) that provides $3.8 billion a year in military assistance over the fiscal year 2019 to fiscal year 2028 period. As the executor of the United States-Israel military-to-military relationship, USEUCOM maintains a robust series of senior leader engagements, constant coordination, and multiple joint exercises. This bond has assumed greater significance as the regional security environment has become increasingly volatile and complex.

THE WAY AHEAD

USEUCOM is determined to address the diverse challenges in the European theater by capitalizing on our strengths, building new capabilities, and leveraging relationships with European allies and partners. We are working to optimize the force posture of land, air, maritime, and cyberspace units. We are enhancing the resiliency and redundancy of our infrastructure network to enable reliable and flexible response options. We are improving cyberspace security and operations through joint defense activities with allies and partners. However, we cannot accomplish our assigned missions without the continued support of Congress. The resources requested in DOD's fiscal year 2018 and fiscal year 2019 Budget Requests are needed to implement the National Defense Strategy, especially to deter, defend, and expand our competitive space with Russia.

Deterring adversaries is contingent on U.S. Forces retaining a decisive edge in combat capabilities, agility and flexibility, on our ability to respond rapidly in a crisis, and on U.S. presence as a constant reminder of the costs of aggression and miscalculation. United States force posture in Europe has been augmented by increased rotational presence, enhanced pre-positioning of equipment, and military infrastructure improvements. Posturing a combat-credible force in Europe as called for in the NDS is essential to deterring future aggressors, preserving stability, and reassuring allies and partners. A combat-credible force includes a combination of assigned and rotational combat forces, flexible basing options, and pre-positioned equipment in the theater.

European Deterrence Initiative (EDI)

USEUCOM's preparedness and agility to respond amidst the uncertainty posed by the current strategic environment is contingent upon adequate and predictable resourcing. The European Deterrence Initiative provides resources that are essential to deterring Russian aggression while assuring European allies of the United States commitment to NATO's article 5. These resources, in addition to the base budget funding that supports USEUCOM, enable our headquarters and Service components to: 1) increase presence through the use of rotational forces; 2) increase the depth and breadth of exercises and training with NATO allies and theater partners; 3) preposition supplies and equipment to facilitate rapid reinforcement of U.S. and allied forces; 4) improve infrastructure at key locations to improve our ability to support steady state and contingency operations; and 5) build the capacity of allies and partners to contribute to their own deterrence and defense.

EDI-funded land forces capabilities are resourcing USEUCOM's requirement for an ABCT presence along with a Division Mission Command Element and combat support and service support enablers. Coupled with CAB rotations, integrated air and missile defense (IAMD) enhancements, ISR initiatives, and eFP support, this increased in-theater presence across Eastern Europe has fundamentally improved our readiness and posture.

In the air domain, we leverage EDI to deploy theater security packages of bombers as well as 4th and 5th generation fighter aircraft to execute deterrence missions and train with ally and partner nation air forces. We are building prepositioned kits for the Air Force's European Contingency Air Operation Sets (ECAOS) and making improvements to existing Allied airfield infrastructure, which will afford us the ability to rapidly respond with air power in the event of a contingency.

In the maritime domain, we are expanding our theater antisubmarine warfare capabilities both by improving our sensor capabilities as well as increasing our capability to surge P–8 antisubmarine assets to critical areas. Additionally, EDI dollars help fund USEUCOM's mission partner environment, which successfully linked into NATO's federated mission network during exercise Steadfast Cobalt last year. This was a significant step in improving interoperability with NATO.

Finally, EDI supports mil-to-mil engagements and exercises that improve interoperability and build partner capacity. Joint exercise Saber Guardian 17, a United States Army Europe led event in Hungary, Romania, and Bulgaria focused on building readiness and improving interoperability under a unified command and control framework. In total, nearly 25,000 United States, Ally, and partner nation personnel from 21 European countries demonstrated the ability to execute the full range of military missions in the Black Sea Region.

To retain our competitive edge and build on the progress made over the last few years since the implementation of the European Reassurance Initiative and EDI, we continue to work within Departmental processes to meet our posture requirements across warfare domains, with consistent targets and a long-term view.

Land Forces

We continue to enhance our assigned and rotational land forces to meet the requirement for an armored division accompanied by critical enablers, such as a fully sourced combat aviation brigade, long-range fires, engineers, and sustainment brigades. This armored capability will be comprised of forward stationed and persistent rotational units as well as prepositioned stocks and infrastructure that enable us to rapidly aggregate these capabilities.

Air Forces

USEUCOM requires additional combat and aviation support air assets, to include prepositioned assets, airfield infrastructure improvements, and dispersed basing. The fiscal year 2018 and fiscal year 2019 budget requests have begun the process of funding investments that enable the rapid reception of fourth and fifth generation fighters, close air support, bombers, and air mobility aircraft in a contingency. We have detailed these requirements in our ECAOS concept, funded through the Administration's EDI request.

Maritime Forces

Additional maritime capabilities are being requested to increase our lethality in the maritime domain and to counter Russian maritime capabilities. Similar to the land and air domains, this necessitates infrastructure improvements to sea ports of debarkation (SPOD) as well as prepositioning critical naval capabilities such as munitions. The fiscal year 2019 request also provides additional capability for antisubmarine warfare (ASW) sensors and platforms such as the P–8s. Additionally, USEUCOM is working with the Department to increase the rotational presence of guided missile destroyers, a Carrier Strike Group, and attack submarines, all of which provide lethal combat power to deter our adversaries and counter growing threats in the undersea domain.

Amphibious Forces

USEUCOM has requested enhancements to Marine Corps Prepositioned Program-Norway to allow the rapid deployment of naval expeditionary forces. USEUCOM has also asked the Department to assess the role that an increased Amphibious Ready Group/Marine Expeditionary Unit (ARG/MEU) presence could play in the AOR, recognizing that deployments in the Mediterranean allow for response to threats in three Geographic Combatant Commands.

Integrated Air and Missile Defense (IAMD)

It is essential that our assigned and rotational multi-domain forces are protected by a robust, layered IAMD capability. The fiscal year 2019 budget calls for the development of an IAMD architecture that begins to address USEUCOM's requirements for capabilities such as those provide by Terminal High Altitude Area Defense (THAAD) and Patriot batteries. These capabilities will ensure we can effectively maneuver forces throughout the AOR. Our approach to IAMD must be inclusive with our NATO allies and key partners as we face a growing ballistic missile threat from regional adversaries.

C4ISR

C4ISR is a fundamental capability set for the Global Operating Model articulated by the NDS. To this end, the fiscal year 2019 budget helps to reverse the long-term reductions in ISR platforms, in manning, and in processing, exploitation and dissemination (PED) capabilities. This includes growing our cadre of intelligence linguists and analysts, adding permanently stationed ISR platforms to the theater, and expanding our satellite footprint.

USEUCOM's command, control, communications, computers and intelligence (C4I) networks must also become more resilient and survivable. More work is needed to ensure the sustainment of operations and to maintain freedom of maneuver in

cyberspace. We are working with the Services to develop infrastructure that will significantly increase C4I capability and resilience.

Freedom of Movement

The ability to rapidly surge combat ready forces into and across the theater is critical to deterring future Russian aggression. Improving freedom of movement and force maneuver both prior to and during conflict requires enhancing our logistics infrastructure. Additional organic logistical assets are being deployed to reduce reliance on commercial providers, mitigate distribution gaps, and accelerate steady state operations. We are also increasing our close coordination among United States agencies, NATO, the EU, and individual European nations.

If fully funded, and once the necessary access agreements are in place, the fiscal year 2018 and fiscal year 2019 EDI program requests will increase freedom of maneuver for the Joint Force by establishing critical logistical hubs capable of supporting maritime operations in the North Atlantic and increasing pre-positioned forward stocks of equipment and munitions. USEUCOM will maximize cost sharing initiatives, such as the NATO Security Investment Program, and increase coordination with European nations and commercial entities to further enhance mobility.

Complex Exercises

A key pillar of our overall deterrence approach is a campaign of high end, multi-domain exercises. We will continue to coordinate our Joint Exercise Program with NATO allies and partner nations to enhance our high-end combat capabilities, promote interoperability, and sustain strategic access.

Cyber

USEUCOM is expanding its cyber capabilities and integrating cyber operations into full-spectrum military activities. USEUCOM is focused on refining cyberspace information sharing tactics, techniques and procedures. To ensure wartime interoperability, USEUCOM is engaged with NATO Allies' and partners' logistics and cyberspace experts to develop a shared framework for cybersecurity.

CONCLUSION

In closing, I want to again thank Congress for its continued support for USEUCOM—especially for the European Deterrence Initiative—and for helping us to articulate to the Nation the very real challenges that the United States and NATO face in the European theater. Russia is engaged in strategic competition with the United States, pursuing a strategy that undermines the international order and erodes U.S. leadership and influence. Violent extremists, also intent on destroying a Western, rules-based system, remain a significant threat. Faced with these challenges, we must reestablish our military competitive advantage and ensure our forces are prepared to address the challenges of this complex, dynamic, and competitive strategic environment. The Service members and civilians of USEUCOM stand ready to do so. We are fully committed to being the agile, lethal, and resilient force needed to protect and defend the Homeland while supporting a Europe that is whole, free, and at peace.

Senator INHOFE. Thank you, General Scaparrotti. Excellent statement.

I think we all look at Russia now—and with the new strategy that we have, we include both China and Russia as the threats. Of course, in your AOR, it's primarily Russia, and it's—we've seen the advancements. There was a RAND report that came out yesterday. There are three things in the RAND report that I want to refer to. One was: In 2016, Russia spent 5.3 percent of its GDP [Gross Domestic Product] on the military. It's important, as we look at some of what we are expecting from our NATO partners, to recognize this. Second thing that was in that report, Russia has the ability to defeat a NATO ally and present NATO with a strategic and operational challenge; specifically, that Russian forces could reach the capitals of Estonia and Latvia in 60 hours. Third, they say Russia has approximately 32,000 troops in the Baltics region, compared to 78,000 for Russia; and the NATO is outnumbered 757—that's Russia—to 129 in NATO, in tanks in the AOR. In addition

to the RAND report that came out, The Army Times article this morning—says the Army plans on repositioning two fully modernized armored brigade sets of equipment in Belgium and Netherlands and, as you said in your opening statement, in addition to one, I guess, rotational armored brigade combat team.

So, to set this hearing off, let me ask you a series of five—these should be yes-or-no questions. However, there's no such thing as a yes-or-no question in Washington.

First, the National Security Advisor, General McMaster, stated that United States ground forces are "outranged, outgunned, and overmatched by Russian ground forces." Do you agree with that?

General SCAPARROTTI. Chairman, if you look at it in a concentrated way, on the border of eastern Europe and only on the ground force, I would agree with that statement. We——

Senator INHOFE. All right.

General SCAPARROTTI. We fight multidomain, however.

Senator INHOFE. I understand that.

The report—the RAND report paints a pretty bleak picture and warns that NATO could be overwhelmed by superior Russian firepower in a war in eastern Europe. Do you agree with that statement?

General SCAPARROTTI. Chairman, would you state that again, please? I'm——

Senator INHOFE. Yes. The statement that was in the report says that NATO could be overwhelmed by superior Russian firepower in a war in eastern Europe.

General SCAPARROTTI. Chairman, I don't agree with that. When you look at NATO, writ large, it has the strength of 29 nations. The effort that's being made in NATO, and the one that's being made here in the United States, is to increase our capability to deter and, if necessary, defend.

Senator INHOFE. Okay. That's good statement. I'd—I'm not asking you to agree with this, but I am concerned, when we have so many reports coming out, that—it's important for the American people to understand the threats that we do face, not just here, but in China also.

Then, the other—third thing it said. Do we have adequate United States forces postured throughout Europe to meet the challenge? I think you've already answered that.

It says—and then, Russia has developed a ground-launch cruise missile, in violation of the INF [Intermediate Range Nuclear Forces] Treaty. Do you agree with that? Yeah, I'm sure you do.

Lastly, the—like we saw in—2 weeks ago in China, and what they're doing in the South China Sea—and, as I said in my opening statement, this is not something that is in your AOR, but, as we have to meet those challenges—and this was a much greater challenge than I thought it was before I was over there, 2 weeks ago—this still would draw off resources from you and—from your AOR, so it's one you have to be very sensitive to. So, I would say, how does EUCOM partner with—on the cybersecurity side—with Cyber Command [CYBERCOM] to prevent and mitigate threats? That's in cyberthreats now. You want to talk a little bit about that?

General SCAPARROTTI. Yes, Chairman.

First of all, in terms of the cyber world, it's interesting, because we each have cyber centers, we each have teams committed, through CYBERCOM, to us, but cyber doesn't have boundaries, like we do between I and General Waldhauser on the ground. So, I think it's pretty fluid, and CYBERCOM is the one that helps us, you know, shift resources that might need to be shifted. Certainly, we share very closely with them any intelligence that we have, et cetera, that affects their AOR. So, I think there's a close relationship.

Senator INHOFE. Yeah. Well, this is—and this is the new threat. This is something that the general public is not very familiar with.

One last thing I'd want is—you to get on the record—you know, we have this requirement in NATO for—a 2 percent requirement. As it is right now, in 2018, the Secretary General estimates eight of 29 NATO allies will meet this, and then it'll get up to 15 allies by the end of 2024. Now, right—recently, there have been a lot of these countries complaining about this. Are you concerned that some of the European officials criticize the 2 percent requirement as arbitrary and unrealistic?

General SCAPARROTTI. Chairman, I'm concerned. They——

Senator INHOFE. Yeah.

General SCAPARROTTI.—need to invest in defense. We've discussed the complexity of this environment, and particularly in Europe. Of course, we strongly encourage them to meet that 2 percent, but also the 20 percent requirement in modernization focused at specific capabilities that are relevant to the environment we're in.

Senator INHOFE. Yeah, that was one of the first things, when President Trump took office, that he examined, was the burden-sharing of NATO. I agree with that, too.

Senator Reed.

Senator REED. Well, thank you very much, Mr. Chairman.

Thank you, General Scaparrotti.

As we all note, Russia has significant conventional power, and so does NATO, but it—they seem to be focusing their attention—asymmetric warfare, knowing that a conventional fight with NATO would probably not be something they could win. Is that your estimate?

General SCAPARROTTI. Yes, sir. I think part of their strategy is, first of all, that, as you look at their doctrine, they intend to use activities below the level of conflict to undermine their opponent. If that would go well, they would undermine their opponent without firing a shot. I would like to make the statement that I think that, while they have advantages, even conventionally, due to interior lines, proximity, and size of force, which was noted by the Chairman, in the longer run, NATO has great advantages that they actually recognize and fear.

Senator REED. Thank you.

Getting into the asymmetric warfare, one of the most disturbing aspects recently is the integration of information warfare in cyber operations. As you pointed out, cyber has no real limit. So, again, we've seen quite extensive activity in Ukraine. But, have you noticed that this—you know, similar organizations in Russia are concentrating, not just on Ukraine, but also the United States? Are

you beginning to pick up indications of efforts that are directed against us, you know, directly?

General SCAPARROTTI. Chairman, I'll say that I have, that I've seen activity related to, you know, infrastructure, reconnaissance, et cetera, within the United States. I'll leave it at that.

Senator REED. Fine. Are we, to your knowledge, the intelligence community and the geographic commanders, kind of map out the Russian, sort of, cyber infrastructure, the—how it's delegated to commercial "enterprises", how it's sometimes retained by the intelligence community in Russia, et cetera? Have we got a good picture of that? Because if we don't, then, you know, it's hard to respond.

General SCAPARROTTI. My personal opinion is yes, we're trying to map that out. We're getting better understanding of it. I would not characterize it as a good picture at this point, not satisfactory to me. Thank you.

Senator REED. Are you getting, not only the resources, but the clear direction to fill in the missing pieces on your—from your perspective as well as worldwide?

General SCAPARROTTI. Yes. I have had my Cyber Operations Center reinforced substantially. We've made good progress. Over the next 2 years, thanks to both the funding here in Congress as well as from CYBERCOM, that will continue to give me the skills that I need in my cyber center. I also, upon request, have the authorities that I've asked for with respect to Russia over the past year to 18 months.

Senator REED. Every time we get on this topic, very quickly, the "whole-of-government response" comes up. So, how would you assess our whole-of-government response? You have CYBERCOM within the chain of command, et cetera, but the intelligence community, the Treasury Department, Homeland Security—do you feel there's a unified effort among all these different agencies, and the State Department, to effectively confront this threat?

General SCAPARROTTI. I don't believe there's an effective unification across the interagency, with the energy and the focus that we could attain.

Senator REED. That's something that would—is something we should do immediately, because—the nature of the threat.

General SCAPARROTTI. Yes, Senator, it is.

Senator REED. Just changing slightly, we are—and you are—constantly trying to assess the strengths, the weaknesses of the Russian forces, going forward. Not just the Russian forces. Any sort of top-line sort of estimate of, you know, long-term, their ability to be competitive with us?

General SCAPARROTTI. Senator, in this setting, I would say that, given their modernization and the pace that it's on and what we are aware of they're doing, we have to maintain our modernization that we've set out so that we can remain dominant in the areas that we are dominant today. If we were not to do that, I think their pace would put us certainly challenged in almost every domain, in a military perspective, by, say, 2025.

Senator REED. Just a final question is that—part of this is significant investments, not just in platforms, but in basic research, which, during the cold war, they were—and we were—deeply engaged at a national effort. Are they engaged in this kind of basic

research—quantum computing, AI [Artificial Intelligence], et cetera—to a significant extent?

General SCAPARROTTI. Yes, they are.

Senator REED. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Wicker.

Senator WICKER. General, you did read and study that RAND report, classified and unclassified, did you not?

General SCAPARROTTI. Yes, I did.

Senator WICKER. Okay. In that regard, Chairman McCain just asked Senator Inhofe to read a statement, in which he said there's a new strategic reality in Europe. General Dunford is quoted as saying the United States is losing some of our past edge. You have the report from RAND, which none of us enjoyed listening to or studying, where it said we—there are plausible scenarios where the United States can lose a war with Russia. What—in that regard, what have—did we learn from the Russian Zapad exercises—wargame exercises in eastern Europe in late 2017 regarding their intentions and capabilities? How well prepared are we, based on what we've learned there? Then I want to ask you to respond generally about where you think the RAND report is missing the mark and where you think they're accurate.

General SCAPARROTTI. Senator, with regard to Zapad, for the most part what Zapad did is reinforce what we believed was their direction, in terms of their doctrine, their training, their modernization. They focused on command and control, strategic to tactical. We saw that throughout the exercise. They focused on both conventional and nuclear, which we expected. They focused on both offensive/defensive operations, and they incorporated what I would call a whole-of-society approach. They mobilized their people, et cetera, in some aspects of this. For us, it was a reinforcement of the doctrine that we've seen developing over the last, I'd say, 10 years.

From that—I mean, we learn from watching, and it helps us posture our force and train our force, and also, you know, the development of our plans, obviously. We take that very seriously, watch it very closely. We had a focused effort to do so. We'll employ it, and we'll be better as a result of that focused effort in their exercise.

Senator WICKER. So, you were informed, but we weren't shocked by anything we saw——

General SCAPARROTTI. I was not. I was not shocked by anything that I saw.

With respect to the RAND report, we have worked with RAND on this. In fact, it was 2014 or 2015 when the base report was done. From the basis of the report, I don't have any argument with the basis of the report and the threat that we have, particularly in the eastern borders, with what it's focused on. That report was also a basis from which we've developed our war planning in EUCOM. Since 2014, we've come a good ways, both in planning and with the posture of our forces there. That report's been helpful in that regard. I would——

Senator WICKER. Did you plan, assuming that sequestration was going to be lifted, as it has now been?

General SCAPARROTTI. We planned with—for what we need, Senator, yes. Having said that, I would—the budget that we have before us today, with a 2-year look, as well, that Congress has agreed to, funds all of those areas that I need in EUCOM to get my posture and my capabilities where it needs to be throughout the FYDP [Future Years Defense Program]. So, it's an important one.

The last point I'll make on this is, is that we have repostured forces since the RAND study was done. We've rewritten plans since that. We would fight this differently than RAND fought it—fought that—you know, that experiment or that exercise that they did. But, there's elements of that that are still, you know, true today. Hence, my comment that I don't have all the forces I need in Europe today, and we've got to continue to invest and establish the posture that's required.

Senator WICKER. Okay. Based on what we're going to do the 23rd of this month regarding this fiscal year and the next fiscal year, how are you going to get the forces you need?

General SCAPARROTTI. The European Deterrence Initiative is a very foundational funding of the forces that I need. It is actually supporting the rotational forces that I noted in my opening statement. My intent is, is to use that as well to begin to station or rotate additional forces, particularly enablers that I need. As you look across the FYDP, I can build the posture that I believe I need, given the funding that I foresee within the FYDP.

Senator WICKER. Just quickly, that's what number of troops today versus what you hope to get to?

General SCAPARROTTI. Well, I can't—it's difficult to give you the number of troops. I can take this for the record, and I can provide you, by service, the posture that I believe that we should be in.

[The information referred to follows:]

[Deleted.]

Senator WICKER. Thank you.

Senator INHOFE. Senator Shaheen.

Senator SHAHEEN. Thank you, Mr. Chairman.

General Scaparrotti, thank you for being here and for your testimony.

As we look at the potential for future Russian aggression in Europe, how important is it for them to feel some heat for what they're doing and to have that whole-of-government approach to respond to their activities? So, for example, how important would it be for us to go ahead and implement the sanctions on their CAATSA [Countering America's Adversaries Through Sanctions Act] so they understand that, if they continue their cyber intrusions, that there's going to be a price to pay?

General SCAPARROTTI. Senator, I think fundamental to deterrence is either, you know, denial or an imposition of costs. So, an effective deterrent has to have one of those elements, or both, and it should have a communication aspect to it, as well, that demonstrates both our capability and our will.

Senator SHAHEEN. Do you—as you talk about that whole-of-government approach that you don't see happening right now, do you think that would accomplish a piece of the deterrence?

General SCAPARROTTI. Well, I think—yes. You mentioned CAATSA. I think, across the board—I don't necessarily ascribe that we should always do what they do. We shouldn't mirror them. But even——

Senator SHAHEEN. Sure.

General SCAPARROTTI.—that underscores the importance of a whole-of-government approach, that we ought to use our other elements of power, as well, together to demonstrate deterrence and also to establish limits on what's acceptable.

Senator SHAHEEN. As you look at the potential for mischief in the future in other parts of Europe, where do you see the—where are you most concerned about future Russian interference?

General SCAPARROTTI. They're involved in just about every aspect of Europe, in one way or the other. The area that I'm concerned about today is the Balkans, actually. It's an area that, through the international community's work, and the United States in particular, we've been able to keep stability there, we've been able to work on democratic governments, and to reinforce that. But, Russia's at work in the Balkans, and I think that we've kind of taken our eye off the area. It's an area where, in terms of diplomacy, we have to put some focus, in my opinion, and we have to continue our security reform and our capability-building that we and the international community's engaged in, in the Balkans. That's an area that we could have problems with again here in the future.

Senator SHAHEEN. How—you mentioned our diplomatic efforts—how important is it that we have those robust diplomatic and economic efforts there in the Balkans?

General SCAPARROTTI. I think it's essential. They view that diplomatic effort and presence, frankly—the people see that as—that's one way that they determine whether the West is serious about their desire to be a part of the West. That involvement, I think, is fundamental.

Senator SHAHEEN. One of the things that some of our European allies in NATO have suggested is that, rather than looking at sort of an arbitrary 2 percent of GDP contribution to NATO, that we ought to be looking at capabilities instead. In view of some of the recent reports about the readiness of some of our NATO allies, how good an argument do you think that is as we think about what may be a better way to determine whether our allies are making the contribution that we really want to see to NATO?

General SCAPARROTTI. Senator, I agree there's other ways. In other words, it's commonly called the "three C's in NATO." Cash is one, at 2 percent. Contribution is one of those, and capabilities. But, I would tell you, I think it's all three. It's not one or the other, or more of one and less of the other two. Two percent's a reasonable percent of GDP, given the threat that we're under today, in my opinion. But, you have to look at, also, their contributions and their capabilities. There are some of the countries that aren't at 2 percent today, but their contributions to NATO missions and also other international missions is quite robust. That should be taken into account.

Then last is the capabilities they provide. Are they using the money in their defense to develop capabilities that are interoper-

able and in sync with our NATO planning? That's important, too, in order to have a strong NATO defense and deterrence structure.

Senator SHAHEEN. How worried should we be about some of those reports that have suggested that some of our NATO allies—some of the bigger NATO allies are not prepared as they should be?

General SCAPARROTTI. I think we should continue to press them to meet the standards. NATO has very well laid out standards and expectations of the forces that nations provide. We should continue to press them to be a part of this defense. The alliance is strong as long as every member is strong and does their part.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you.

Several references have been made to the report—the RAND report that just came out. I ask unanimous consent to be made a part of the record.

Without objection, so ordered.

[The information referred to follows:]

Please refer to Appendix A.

Senator INHOFE. Senator Cotton.

Senator COTTON. Thank you, Mr. Chairman.

Thank you, General Scaparrotti, for joining us once again.

I'd like to continue the conversation about the Balkans that you started with Senator Shaheen. Many people tend to focus on the Baltics, since they are NATO countries exclusively, but I think that NATO status probably makes them a bit more stable, in terms of the threat Russia poses, than the Balkans, in which there are numerous countries that don't belong to NATO. Could you be more specific and say a little bit more about which countries in the Balkans are matters of concern for you, in terms of Russian meddling and interference?

General SCAPARROTTI. Well, I think Serbia, in particular, there's a connection——

Senator COTTON. Serbia proper or——

General SCAPARROTTI. Serbia——

Senator COTTON.—Republic of——

General SCAPARROTTI. Well, I would tell you that it's Serbia, as a nation, but then the Serb population, as well, within the Balkans. There is obviously a historical connection there, an affiliation, and—but there is also a—because of that, a better opportunity for Russian influence. They take advantage of that, in terms of disinformation, influence upon those populations, a spoiling effect, in some cases, perhaps with Serbia with respect to Kosovo or within the tripartite government of Bosnia Herzegovina. That's my concern. I've seen an increase in that, I believe, in the year and a half that I've been in this job.

Senator COTTON. Last year, the Senate ratified the Montenegro Accession Treaty to have Montenegro join NATO. Obviously, that was an important part of our strategy to close the Adriatic coast. They were the last piece of that. How has Montenegro's integration into NATO gone since they had their accession?

General SCAPARROTTI. It's going very well. I've visited the country, spent time with their Chief of Defense. A small nation as a

part of NATO at this point, but active in providing troops for our missions, focused on their military capabilities, and beginning to grow those and make them better. I think they're going to be a valued member, here, as they move on. They are a valued member, but I think they'll continue to increase in strength.

Having said all of that, they're not out of the woods with respect to Russian interference in their government, influence and attempted influence in their government, which you know was very severe just short of their application to NATO.

Senator COTTON. I was in the Balkans last August, and I heard some of these points, as well. One other thing we heard, and some of the things we witnessed, there was not just Russian influence in the Balkans, but also Turkish influence, sometimes not for the good. Could you say a little bit about what Turkey is up to in the Balkans?

General SCAPARROTTI. Turkey primarily enters most of these countries in Balkans with a humanitarian approach and to assist in that regard. There are some that have said this influence isn't helpful, as you've said, in the ways that they operate. But, I haven't personally seen that, myself. I'd—if I could, I'd take this for the record, and I'll give you a little more concrete and accurate——

Senator COTTON. Sure.

General SCAPARROTTI.—response.

Senator COTTON. Sure thing.

[The information referred to follows:]

Turkey maintains bilateral relationships with several Balkan countries and has especially strong defense relationships with Albania, Bosnia-Herzegovina, and Kosovo. Turkish engagement is often based on historical and religious ties, which date to the Ottoman period. In the wake of the July 2016 coup attempt in Turkey, we have observed increased Turkish pressure on Balkan countries to close schools and charities tied to the Gulen Movement. However, in general, Turkey's engagement objectives in the region align with EUCOM goals. Like other mature NATO Allies, Turkey mentors Balkan militaries through exercises, professional military education opportunities, and provides grant assistance to purchase military equipment from Turkish industry sources. Additionally, Turkey has supported NATO activities in the Balkans since the 1990s, including SFOR and KFOR in Bosnia-Herzegovina and Kosovo. Turkey currently has approximately 290 troops serving in KFOR and two to three staff officers at NATO Headquarters Sarajevo, along with approximately 250 troops at the European Union Mission in Bosnia-Herzegovina. To the extent that these activities build the capacity of Balkan nations, we believe they help strengthen the NATO Alliance.

Senator COTTON. While we're on the topic of Turkey, there have been reports that Turkey may be on the verge of acquiring the Russian S–400 air defense system. That quite possibly could trigger sanctions under CAATSA, a law that Congress passed last year. Could you give your thoughts on what Turkey is thinking in buying a Russian system, especially now that CAATSA is on the books here and might target those kind of sanctions against a NATO partner?

General SCAPARROTTI. The—you know, they've stated publicly that they intend to purchase and they've made a deal with Russia to employ the S–400 as an—as their air defense system. I've had this discussion with their Chief of Defense multiple times, and we continue to discuss it.

If they were to employ this system, they obviously are interoperable with the NATO systems and the U.S. ones, and they couldn't

be connected to the system. They're aware of that ramification. We've made—not only myself, but other members of our government, have made them clearly aware of the other ramifications of moving forward with a purchase of the S–400. So, they're aware of that.

The last thing I'll say is, is that we're in a close discussion with Turkey with respect to air defense measures and the systems they could employ. I don't think that's a finished deal yet. I mean, I think that they are talking to us, as well as others, to purchase a system that's interoperable in NATO. I think we have some time. My intent's to continue to work that aspect, to convince them that the better system is, in fact, one of the NATO interoperable systems.

Senator COTTON. Good. Thank you, General.

My time has expired.

Senator INHOFE. Senator Hirono.

Senator HIRONO. Thank you, Mr. Chairman.

Thank you, General Scaparrotti. Good to see you again.

You were talking about the modernization—Russia's military modernization. Our big power competitors are Russia and China. Do you have, in terms of the scope and scale of Russian modernization, as compared to China's modernization, is China's modernization efforts many times more than Russia's modernization efforts?

General SCAPARROTTI. Senator, if I could, I would say this, and I'd like to take that for the record, as well, so I could think about this a bit in comparison.

[The information referred to follows:]

Russia and China pose an enduring threat to United States and Allied interests. There are similarities in each country's military modernization programs and in our understanding of their approaches to conflict. Both are developing precision kinetic and non-kinetic capabilities capable of achieving strategic effects in all domains—ground, air, sea, space, cyberspace, and electromagnetic. They are both developing asymmetric capabilities and strategies most likely to exploit perceived vulnerabilities in U.S. and U.S.-led military coalition capabilities, and which could be used to challenge United States force projection. Russian military modernization will support its posture to readily apply military force in response to crises—directly or indirectly—across the extent of Eurasia as well as advance its interests over the long term in Europe, the Arctic, the Middle East, Central Asia, and parts of East Asia. Both countries will continue to develop capabilities to sufficiently pursue their interests at the expense of our own for the foreseeable future.

Russia and China are developing formidable space and cyberspace capabilities which will extend their reach and allow them to challenge United States dominated space-enabled warfare capability. Russia and China continue to develop nuclear or conventional cruise missiles capable of striking CONUS and United States assets across the globe. Both Russia and China are reestablishing and refining their capabilities to conduct long duration blue water operations in an expanding sphere of naval influence, and potential threats to United States and allied interests in multiple theaters.

Russia's operational experience in Syria has provided opportunities to conduct testing of precision strike, indirect fires, air defense and special operations. Russia has demonstrated the ability to conduct limited expeditionary operations for the first time in decades. Russia gained similar operational experience—direct and indirect—during their illegal annexation of Crimea and its on-going involvement in Ukraine. These scenarios have helped them develop tactics, techniques and procedures, gain valuable military training, and in turn drive defense acquisition program priorities.

China continues to develop precision strike capabilities which enable them to militarily compete and potentially win in its theater of influence. China's continued development of military outposts, including artificial islands, furthers their goals of projecting sovereignty in the South China Sea. These outposts not only allow China to contest United States access in the event of a conflict, but allow China to force-

fully claim natural resource rights in these areas, including fishing rights and hydrocarbon exploration.

While China maintains a stronger economic standing, the continued integration of Chinese and Russian strategic interests emboldens their developing bilateral relationship. This potentially compounds the threat to U.S. and allied interests. Russia and China are developing multiple trade, development, and security agreements. Further military integration and training could probably be propelled by shared, but unequal, economic stimulus. Plans to develop central Asian markets will also invigorate both economies in the long term. Progressive collaboration will decrease vulnerability of either nation to western trade sanctions, eroding the ability of the west to check and limit hostile actions through political means. China's projected military investment for 2018 is approximately $175 billion dollars, compared to $65 billion for Russia. Hydrocarbon revenues account for nearly half of Russia's budget, and its economic growth in recent years has been strained by depressed oil prices, trade restrictions, and sanctions. Conversely, China's diverse, export-based economy returned an average of nearly 10 percent growth rates for almost four decades. Lastly, there are limits to the extent to which the two rivals will become "partners" neither of which desiring it to be the "junior" partner.

General SCAPARROTTI. But, generally, having been in the Pacific, the ways in which they're modernizing, particularly with respect to their capabilities, their weapon systems, the domains that they're focused on—maritime, et cetera—there's a lot of similarity in terms of where they're focused. And so, you know, Admiral [Harry] Harris and I, when you look at what we're focused on for either research and development or modernization or pacing in our forces, they very closely align. From that perspective, I think there's a—there are common areas there. But, again, I can be more specific, with a little bit of time to make a very specific comparison across domains.

Senator HIRONO. Well, that is not to say, of course, that that kind of comparison should lead us to take our eyes off either country.

One of your main priorities is to deter Russia. You noted that they use activities below the line of what they—of what might cause us to respond in some clear way. One of the ways that—one of the activities that they use is to interfere with our elections, using social media, cyber, et cetera. You would consider that one of the ways that they are using to undermine our country, in that we need a whole-of-government approach to counter what Russia is doing with our elections.

General SCAPARROTTI. Yes, Senator, I do. You see it in Europe, as well. They've been involved in——

Senator HIRONO. Yes.

General SCAPARROTTI.—in elections in Europe, and the influence of political parties in Europe, as well.

Senator HIRONO. That was going to be my next question. Have we learned any lessons from Russian interference with European elections that would enable us to counter what they are continuing to do in our country?

General SCAPARROTTI. I think we've learned from each other. I would put it that way. We helped French and—France and Germany as they approached their elections, based on what occurred here. As they've gone through it, we've exchanged that information. As a result, we've got a better idea of the Russians' approach, the capabilities that they use, and how they use it. That's all improving our ability to, you know, defend the sanctity and the sovereignty of our election systems.

Senator HIRONO. All well and good, but previous testimony from the—Director Coats and others, I think, is pretty clear that we do not have a whole-of-government strategy at this point to counter Russian interference with our elections. Are you part of the efforts on our country's part to come up with a whole-of-government strategy? Have they come to you? The executive branch.

General SCAPARROTTI. I would—with respect to our elections, that's not really within my portfolio as the EUCOM Commander. That is at CYBERCOM, OSD [Office of the Secretary of Defense], Joint Staff level. If there's a specific area that I would be involved in, they would bring me into that. We have connections, we have discussions on cyber operations, information operations, et cetera, frequently. But, it wouldn't be one that I am directly involved in.

Senator HIRONO. No, there doesn't seem to be any one agency that is taking the lead on this, and that is a cause of concern for many of us.

Let me turn to another subject. Many times, that it will require a whole-of-government approach for us to maintain our position, let's say, in the world. Concerns with the administration's cuts to the State Department and Treasury, along with the effects that these cuts would have on foreign diplomacy, which you have already noted as really important, can you talk a little bit about the effects of these cuts to State Department and Treasury personnel on your mission?

General SCAPARROTTI. Yes. I can't speak to the cuts, themselves, and how that impacts inside of State. That's best to go to them. But, I will say this, that everything we do in EUCOM, we look at it as an interagency activity, generally with State in the lead, as diplomacy leads from our—is the way that we work here in a democracy. Everything I do, we look at from a whole-of-government approach. We look at it, usually, with one of the other agencies in the lead in most of what we do in Europe. In each country, my—you know, my first goal is to ensure—or our objective, I should say—is that we support the Ambassador and the Ambassador's country team and their efforts within that country. So, a reduction——

Senator HIRONO. Yeah.

General SCAPARROTTI.—of their abilities would not be positive.

Senator HIRONO. Thank you. Including a 26 percent cut to the State Department and the departure of many senior personnel.

Thank you very much, Mr. Chairman.

Senator INHOFE. Senator Ernst.

Senator ERNST. Thank you, Mr. Chair.

General Scaparrotti, thank you so much for your service and your willingness to come in front of us and give us important updates today.

As the U.S. is turning its focus to great powers and near-peer threats, it is important for us to consider ways that we can best leverage our resources. One way that the United States has begun doing this is by putting into place the Army's new Security Force Assistance Battalions, or the SFAB, that's located at Fort Benning. We are currently leveraging the SFAB in the Middle East, in Afghanistan. Perhaps this unit, with its unique capabilities in the train-advise-and-assist areas, could be used to take stress off of our

special operators, especially in EUCOM. Could EUCOM benefit from those capabilities? If so, where could you see us using the SFABs in EUCOM?

General SCAPARROTTI. Well, first of all, it's not necessarily in EUCOM, but I'll respond, given that I'm also the SACEUR [Supreme Allied Commander Europe], and United States is a part of Resolute Support, you know, the mission within Afghanistan, which is where they're deploying the SFABs. I was just in Afghanistan last weekend. This is going to be a great boost to the mission there, because they're trained specifically for train, advise, and assist. They're organized for that. They're prepared for the mission in the place that they're going to. That's what we need in Afghanistan. We need to focus on train, advise, and assist to continue to build the capability of their force. I'm fully supportive of this, and I think it is an efficient use of resources and also helps us to maintain the readiness of our Army units as an—as a fighting force, in terms of those other brigades, as opposed to pulling one apart to do the SFAB job.

Within Europe, there's a time and place. There's two ways. We do capability development throughout Europe with our allies and our partners. There may be an application there as we get into a focused training effort, like we do in Ukraine, for instance, or in a projecting-stability type of effort, where we assist in some countries in Northern Africa, perhaps, in order to build their capability and prevent destabilization.

Those are just a couple of quick ideas. But, I think having that force, there's certainly plenty of opportunity when it comes to strengthening our partners and using a force like that.

Senator ERNST. Right. Well, I agree, and I'm excited to see how their deployment goes in Afghanistan, and how we can utilize their—the adeptness of that type of unit in other cultural situations, as well. As we look to Europe and what we see going on in Ukraine, it might be another opportunity for our SFABs to excel. I appreciate your feedback there.

Now, we know that Russia—that's the topic, it seems, this morning—but, the malign activity across the EUCOM AOR is, of course, extremely concerning. I think you've seen that demonstrated from all of us here, sitting with you today. Whether it's the illegal presence in Crimea, whether it is their information operations, their gray zone activities, we've talked about a lot of that today—violations of the INF Treaty—we need to bolster our posture in their destabilizing actions. We need to push against that. So, the DOD's budget request for fiscal year 2019 is $2 billion—or a near-2-billion-dollar increase for the European Deterrence Initiative. If it weren't for that funding provided by the EDI, do you think that EUCOM could fully perform its mission to deter and, if necessary, defeat aggression in Europe? What if we no longer had those dollars?

General SCAPARROTTI. Senator, I could not do my mission without the EDI and the increase. That—as I have said, it not only continues what I have today, what we've built, but, through the FYDP, this is what's going to establish the full posture that we need, in conjunction with our allies.

Senator ERNST. If you had one dollar more, where would you spend it?

General SCAPARROTTI. Well, that's—I would probably go—if you look at where we need to continue development, I would most likely start at C4ISR [Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance], because our intelligence, surveillance, and reconnaissance is so important to me, particularly when you don't have the posture you want. You've got to be able to get ahead of and be able to predict what your posture needs to be. That's probably the area that I'd put my next dollar into, if it were up to me.

Senator ERNST. That is exceptional, because I think we hear from many of our other commanders, as well, that ISR [Intelligence Surveillance Reconnaissance] is in high, high demand. Thank you very much, General.

Thank you.

Senator INHOFE. Thank you.

Senator Peters.

Senator PETERS. Thank you, Mr. Chairman.

General, thank you for being here again today, and thank you for your service, as always.

General, how would you define the term "political warfare"?

General SCAPARROTTI. Political warfare. Well, I think it would be the attack or efforts to spoil policy or politics within a government. That could, you know, cover a range of its governmental activities, its individual agencies, its policy, and its values.

Senator PETERS. That's certainly been an element of strategy for—since the beginning of warfare, just different types of technologies. However, in today's digital domain, that—the ability to use political warfare is leveraged dramatically. I think most observers see that that's going to be a major part of conflict, going forward. It's a part of conflict that we're seeing right now with Russians.

I had the opportunity, when I was in Latvia and Lithuania recently, to be there for Saber Strike, an exercise that went on with a number of countries. I had the chance to visit STRATCOM [United States Strategic Command]. That was dealing with communications that were coming from the Russians that were really about—were really—in my mind, were kind of the classic definition of political warfare, to sow confusion, to create distrust. In fact, some of the communications that I saw were put out by Russians on social media, that the Americans had dropped a bomb on a farmhouse or a store, some sort of civilian building, and that the Americans simply can't be trusted, because, when they're in your country, bad things happen. I'm sure there are other examples. Could you give us a sense of the types of things that the Russians are doing on a regular basis that interfere with NATO's ability to have the trust and confidence of the citizens of those countries?

General SCAPARROTTI. Yeah, thank you.

I would just tell you that the kinds of things you described that you saw there is not uncommon throughout particularly the east, but even into the depth of Europe. Typically, when you look at their disinformation, their social media, it is generally targeted at the undermining of Western values, the confidence in that government, confidence in their governmental leaders, almost always subtly just hedging away at that. Because of today's capabilities and

information, where they can use a multiple—multiple platforms and generate great volume, it can really undermine a nation. Because all they have to do is just sow some confusion, primarily, sow enough confusion that there's distrust in the government. It's not an uncommon thing to see.

Senator PETERS. Yeah. In fact, it's going on constantly, is it not?

General SCAPARROTTI. It is. It's subtle, but it's—it is constant. It is at greater volume in the countries in the east than it is, perhaps, in the south/southwest of Europe.

Senator PETERS. When I use the term "political warfare," this—they are engaged in political warfare with the West, generally, as a result of these activities, in trying to sow this distrust, which undermines any of the—the fundamental basis of democracy is, the people have trust in their government and their ability to effect the changes in that government. If you sow distrust, it undermines it. I—what—we have to combat this. Obviously, this is something—we have to understand the Russians are not our friends, they're engaged in these activities, not just in the United States, but all across Europe and other parts of the world. What would be the role for—in your mind, as—in your capacity, for U.S. versus our allies, and the role of government operations versus what the private sector should be expected to do in civil society, generally? How do we grapple with this?

General SCAPARROTTI. Well, I think one way is, is that—we, in the military, reinforce all of these civilian agencies and capabilities, to include national media, et cetera. We have to continue to focus on the values and—you know, the values that democracies profess—democratic institutions, international rule of law. That's a very high-level, general statement. But, we've kind of left that. Western democracies have kind of assumed that our people understood what was important about a democracy and the way that we live. We've got to reinforce that. It needs to be done across all the different levers that we can do it. That takes focus, and it takes volume. It takes information volume to do that.

Senator PETERS. Do you believe that we should actively engage some of the major tech platforms to be part of the solution, and to be more active in this space than they are now?

General SCAPARROTTI. Yes, I do. On our side, in conjunction with NATO and the other nations, we're actually employing our capabilities to get our messages out, at volume.

Senator PETERS. Great. Thank you, General.

General SCAPARROTTI. Thank you.

Senator INHOFE. Senator Tillis.

Senator TILLIS. Thank you, Mr. Chair.

General Scaparrotti, it's good to see you again. Thank you for the time that you spent in my office, and also being at the official launch of the NATO—the Senate NATO Observer Group. I appreciate all the work you're doing, and Ambassador Hutchinson. We look forward, with Senator Shaheen, in getting more engaged as we continue the rollout.

I want to probably talk about something you would have anticipated today, and it has to do with trade. We know that—the discussions around the tariffs, we know that China is a bad actor, and that there legitimate, I think, national defense concerns there. But,

the way that the tariffs get implemented, it could sweep in even some of our NATO allies if we don't get it right. I know this is a fairly new discussion, but I was wondering if, in your role, you have heard any of the discussions among some of our allies about concerns with how that gets rolled out.

General SCAPARROTTI. Senator, actually, I haven't, at this point, because I was back in the States here for meetings and then hearings. As this has been a topic in the news and discussion, I've actually been in the States.

Senator TILLIS. Well, would the—it would be very interesting. Maybe we can get a readout once you get back over there, because, since these tariffs are moving forward on the basis of national defense concerns, it would seem to me that that will probably weigh into the discussion.

The other reason—I'd be very interested in the feedback. I won't press you more on the question. But, I know that we're making great progress on our NATO partners' contributions as a percentage of GDP. A part of what's going to help sustain that upward trend is going to be good economic performance in those nations. If they start seeing a dip in their economy, then my guess is, this is one area where they may look at and move their continuing contribution to the right as they move up to the 2 percent target. I think it's very important for us to get feedback, and have that feedback get back to the administration so that, when they tailor it, they do it in a way that's not disruptive to the chemistry and the relationship that we have with our partners. I'd appreciate getting that feedback.

The other question I have, How would you grade the mood of our NATO allies and their sense that the U.S. is absolutely committed to moving forward and building on the partnership? Strong?

General SCAPARROTTI. Yes, I'd say it's strong. What they see is investments like EDI, 5 to 6 billion dollars, and then the presence of our troops. That's a strong statement.

Senator TILLIS. Could you talk a little bit about the—I think some people believe that—this is for the benefit of the public—when you're trying to get to that 2 percent margin, it's not like it's going into some NATO account, being spent on the new building and all the other things there. Can you talk about the inherent capabilities and the readiness, the benefits to the nations themselves, by virtue of upping that—their investment as a NATO partner?

General SCAPARROTTI. Well, roger. First of all, we live in an environment today that's changed dramatically in the last even 5 years, but certainly 10, in terms of the threats that we have in the environment—European—the Euro-Atlantic environment. So, they need a force that's relevant to that. The force that they had 5 years ago, that we had 5 years ago, is not fully relevant. Take the cyber domain, for instance, as just one example. The increase in precision weaponry, in the types of weaponry, is another. So, to secure their population, their own sovereignty, which is a requirement of article 3 and 4, and also to have the benefit of article 5, they have to invest in this, and they have to have a force that's relevant. It's to—it's for their own population's security and good, but it's also for us, as an alliance, the good of the NATO alliance.

NATO alliance secures 50 percent of the GDP of the—you know, of our nations and theirs in the Euro-Atlantic alone. When you talk about prosperity, the increasing—their increasing economy, which it is improving right now, I think that security in NATO's foundational security is a part of that.

Senator TILLIS. Well, thank you. Just in closing, when you get back and you get an opportunity—it may be that nobody's talking about the looming concern over the—what the President described may be a trade war. I'd be very interested in seeing if that is having any sort of an effect on the relationships that you're most concerned with.

Thank you, Mr. Chair.

Senator INHOFE. Thank you.

Senator Warren.

Senator WARREN. Thank you, Mr. Chairman.

Thank you, General, for meeting with me last week, and thank you for your service.

Now, Russia continues to actively work to meddle in countries along its border and undermine unity within the NATO alliance. They do it through cyberattacks, they spread disinformation, they spread false stories through social media, they foment institutional corruption and use a lot of other manipulative measures. One of the countries in your area of responsibility is Sweden, which is not a member of NATO, but which did conduct major military exercises with the NATO troops last year. Sweden has a general election coming up in September, and I understand that they are taking preemptive steps to deter Russian interference.

General, without divulging classified information, can you talk just a little bit about how you're working with Sweden and other countries in your area of responsibility to deter this kind of Russian information warfare, and what you've learned that we might apply here in the United States?

General SCAPARROTTI. First of all, I'd say that Sweden is one of those countries that I think's more advanced in this, in terms of just my—that's a personal opinion, looking at the nations throughout Europe, in terms of their willingness to take it on. One of their techniques is, they're very open about an attack, they publicize it, they push back against it. They're, I think, very forward-leaning with respect to their population and the education and how to question information that they get, broadly, and ensure they know the source, et cetera.

With respect to Sweden, they're a very close partner, a great partner within Europe, both as a partner to NATO, but also with the United States. We work with them and several of the other Nordic countries together in a routine conference in order to look at ways that we can strengthen our defense and also conduct training that's helpful to all of us.

Senator WARREN. Good. I think that's really helpful. Whether it's Sweden or the United States or a whole lot of other countries, Russia is hellbent on undermining democracy. Putin and his online trolls are not going away, and we face a choice. We can sit on our hands and let the Russians interfere in our elections, or we can be proactive and work with our allies to deter Russia and Russia's information warfare.

Now, there's one other topic I want to ask you about, and that is, last year I asked you about your support from the State Department, and you told me that you believe our military and diplomatic agencies need to work together to confront threats to our security and threats to our allies. I understand, from your comments to Senator Hirono, that it's safe to assume you haven't changed your position on that. Is that fair?

General SCAPARROTTI. That's correct.

Senator WARREN. Good. I thought so. I want to explore one aspect of how this works, in practice. In order to have robust diplomacy, we need to have the personnel to carry it out. Out of the countries in your area of responsibility as the head of European Command, the United States currently does not have a confirmed Ambassador or even an official nominee for six of them: Belarus, Belgium, Iceland, Ireland, Sweden, and Turkey. General, as an operational commander, do these diplomatic vacancies concern you as you carry out your mission? If so, why?

General SCAPARROTTI. Yes, Senator, it does concern me. There's other organizations that have an Ambassador that don't have them, as well, yet, beyond the number you've given. The country teams, for instance, in the Embassies, have great staffs, and we work very closely with them. But, the Ambassador is a key individual appointed by the government, recognized by their government as the Ambassador. We need to fill those in each one of these countries, particularly in a country, for instance, where—Turkey, today, where we don't have an Ambassador now and we are in very sensitive discussions in order to continue to reinforce and strengthen, you know, our relationship with a key NATO ally.

Senator WARREN. Yeah.

General SCAPARROTTI. The Ambassador's position is key.

Senator WARREN. Thank you. Thank you very much, General. We need to have both a strong military and a fully staffed State Department to best defend America and its allies. We can't do that with empty ambassadorial posts and vacant positions throughout the State Department and around the world. The Trump administration's failure to fill major diplomatic posts has damaged our diplomatic readiness, and that makes our military's job harder.

Thank you. Thank you, General.

Senator INHOFE. Senator Sasse.

Senator SASSE. Thank you, Mr. Chairman.

General, thank you for being here. Thanks for your generosity with your time the last few weeks as you've been in—back in the U.S. A bunch of us have a lot of respect for you and appreciate the tutorials you've given us.

I think you said, earlier—you said it in your written statement, and I think you also said earlier, in response to a question, that Russia is now employing a broad menu of tactics and tools to manipulate and destabilize lots of nations, and to manipulate and distort public information in a lot of the nations in your areas of responsibility. I think, at one point, you also said that a lot of their tactics are just short of war. Could you unpack what the line is in information warfare between just short of war and being at actual cyber war?

General SCAPARROTTI. I think that's the key question. It's something we've got to explore. It's particularly important in cyber, as well. There are discussions being had here in NATO, et cetera, to determine what the definition of that is. But, it would have to do with, you know, an attack that damages the vital interests of the United States, I think, is the first place I would start to—you know, to define that, and particularly true within cyber, as well. That's probably, at this point, what I would say. I would start at the vital interests and go from there. But, a better definition of that within our government, within NATO, then helps us when we are in a situation where we see a crisis or an attack that's approaching that, and we can have greater agility, greater flexibility in determining how to respond.

Senator SASSE. Public trust is at an all-time low. We've had decent polling in this country since the 1930s. Public trust is at an alltime low in most of our institutions right now. When you look at every major culture-war dispute that happens amongst us—I think about when the President decided to pick the scab at the Kaepernick and NFL [National Football League] kneeling-before-the-flag issue, in the—it's public information now; I think it's been in the press enough times that, in the 2 or 3 days after the President decided to reignite that fight, two of the fastest trending hashtags on Twitter, Facebook, Instagram, Snapchat were#takeakneenfl and #standfortheanthem. I think those of us who have spent a lot of time on this issue are well aware—I know—I think the percentage is probably still classified, but the huge share of that culture warring in the United States was actually of Russian origin. Both sides of our culture wars. "Take a knee," "stand for the anthem," Putin loves it. When Americans hate Americans, and when we fight with each other, Russia wins. I know that you've seen lots and lots of similar things happening in European nations. I don't know how that is really different, in terms of the ultimate public negative consequences, than if this were done to a specific U.S. corporation, who then saw its market cap and its economic value collapse. We're nuts if we don't understand that the next round of this is going to include lots of specific economic warfare.

When we see attacks on public trust, we're not sure that it's warfare. If it were an economic action and you saw a specific United States company devalued because of fake information that was out there from the Russians, would that be war?

General SCAPARROTTI. I don't know. I don't—and I'd—you know, this is a policy question, actually, when you get to it, but I think what you're driving at is what I said earlier, and that is, is that we live in a different world today. The change in what is considered, you know, part of our environment, particularly having to do with information, the speed of it, the connectivity of it, the ability to, what I call, you know, develop volume, the impact of cyber activity, are all things that we're wrestling with. But, we need to wrestle with it, because we've got to get a better definition of our activity within those, and what's acceptable.

In the international community, when it comes to conflict, what we've done since the end of the second World War was help to establish institutions that established an international rule of order

that nations are expected to follow. I think, in these new dynamics here, the new strategic environment we're in, we've not done that yet, and we have to begin to move forward, in some means, to determine how we discipline particularly the cyber and the information domains, et cetera, to a certain extent.

Senator SASSE. One of the things that's unfortunate about the ways that we're deliberating about where we are in the evolution of warfare and the emergence of cyberwarfare is that it's people in the uniform who are doing the hardest work and then come and stand before committees like this, and you end up—you and your colleagues end up taking a lot of the beating for what is really a failure of political leadership in both the legislative and executive branches, and both parties. Right? After the Chinese attack on OPM [Office of Personnel Management], 3 years ago, the last administration had no real response. In the current moment, with Russian attacks, the current administration has no real response. The legislature is not nearly serious as—serious enough about this issue. Regularly, we take people who are in your position who are trying to help develop a menu of options for us to understand the problem, we're not active in response, and you're the one who ends up having to take some of the brunt of the heat.

I would love to follow up with you. You and I have discussed this in private and in the SCIF [Sensitive Compartmented Information Facility] in the past. I'd like to follow up with you, in a formal letter, and ask a question about this policymaking issue in the definition of "war" and in the cyber rules of engagement, because we'd like to help push forward, at the more senior levels of the Pentagon, and then ultimately at the handoff of the White House, where those discussions are. Because I've been here for only 3 years. I'm one of five people in this body who's never been a politician before. I've been here for 3 years, and I've asked these questions every 2–3 months for 36 months straight. Frankly, it doesn't seem like we're any closer now than we were 36 months ago to having answers to these questions. That's ultimately, chiefly the responsibility of the Congress, the article 1 branch. But, we need the help of people like you to tee up those questions. I'll follow up in letter, too.

General SCAPARROTTI. Thank you, Senator.

Senator SASSE. Thank you, General.

Senator INHOFE. Thank you.

Senator Kaine.

Senator KAINE. Thank you, Mr. Chair.

General Scaparrotti, thank you for your service and your testimony today.

You've been asked a couple of questions about the RAND study, the unclassified version of which was entered into the record. I want to ask you a question about that, too. We've been briefed about it, and one of the things I noticed that was interesting about that study is, it analyzed the state, sort of, power competitors we have, in terms of their capacities, but it didn't really look at, "Well, what if a couple of them combine capacities." That really was not covered in this part that I read. We always talk about our combined capacity, with NATO, for example, but if you look at the RAND report, you would assume that we would face, potentially,

a set of discrete competitors, but there's little thought, in the sections I've read, about what their relationships are with one another. We're not the only country that has allies, even military alliances.

The area that I would probably have the most concern would be a Russia-China relationship that would seek to exert more influence to our detriment, although you've seen Russia and Turkey start to have some cooperation in areas that are—that maybe is a little bit unusual, given the history between those two countries.

I'm wondering if you could, first, maybe address this issue from your standpoint. Are you seeing anything in the Russia-China relationship that would signify that they are growing closer together, in terms of mil-to-mil activity or other activities, where the combined effect of their capacity should pose us concern?

General SCAPARROTTI. I would still—start by saying, I think that there's not a—I think they still have issues that wouldn't make them natural partners. But, what we have seen, I think, in the last—I'll just go for this past year, for instance—we've seen Russian and Chinese naval operations training together in the European theater on a couple of occasions now.

Senator KAINE. In the European theater.

General SCAPARROTTI. In the European theater. Maritime operations. We know that there has been some work together, at least we think, in the port in Djibouti, a little bit of assistance for each other there. So, we've seen other areas, mil-to-mil, where they've come together for specific training purposes, et cetera. There's a little more collaboration there than we've seen in the past. Of course, that is somewhat worrisome.

Senator KAINE. How about Russia and Turkey?

General SCAPARROTTI. Yes. But, there again, I think they've always had an economic relationship. It was disturbed with a shootdown of the Russian aircraft. I think part of what the government has tried to do is reestablish the economic relationship. There has been, obviously, with respect to Syria and their operations there——

Senator KAINE. Right.

General SCAPARROTTI.—at a minimum, deconfliction, if not support between Russia and Turkey.

Senator KAINE. How about Russia and Iran? Obviously, we know they are both backers of the Assad regime in Syria, but are you seeing Russia and Iran engaging in mil-to-mil activities, training, other things that would make you worry about their combined capacities?

General SCAPARROTTI. There are activities where they work together. I think it's one of convenience. But, obviously, any of these nations that might be able to come together, particularly with respect to areas that we're operating in, would be of concern, mil-to-mil.

Senator KAINE. Let me switch quickly to one last Turkey question. The Turkey issue is very vexing. A NATO ally, we use the base at Incirlik for important tasks in the fight against ISIS. Turkey has been very discouraged at the United States alliance with the Kurds in northern Syria in the ISIS battle. That is a very serious point of contention now between the Turkish Government and

the United States. Just give us a little bit of a future look at the United States-Kurd relationship in northern Syria. The Kurds have been great fighting partners for the United States in defeating ISIS in northern Syria, but the United States has also been a great partner to the Kurds in enabling them to take back land that is theirs, from ISIS. Having—are we at a state now, in northern Syria, where we are now sort of reducing the work we do together with Syrian Kurds because of the diminished threat of ISIS in a way that should cool the temperature of this challenge between Turkey and the United States?

General SCAPARROTTI. In this process, I work closely with Turkey. That's within EUCOM. The Kurds and those——

Senator KAINE. Right.

General SCAPARROTTI.—operations in Syria——

Senator KAINE. CENTCOM [United States Central Command].

Senator KAINE.—are with CENTCOM. So, we—I and Joe Votel, as you can imagine, talk frequently on this, as well of—our staffs, working together.

My approach to this is, is that we work not only at—look at the immediate interests of both nations, but we look at the longer-term interests. Where do we want to be in a year, 2 years, and 5 years? With that perspective, with a close NATO ally like Turkey, we know that we want to maintain and strengthen our relationship. That's the long-term objective. I think if we look at that long-term objective, it can begin to inform what we're doing today with respect to NATO as an ally and the Kurds, who are our partner, in defeating ISIS. Although it's a very difficult and complex situation, I'm hopeful that we can walk this path and attain both interests.

Senator KAINE. Mr. Chair, thank you.

Senator INHOFE. Thank you.

Senator Sullivan.

Senator SULLIVAN. Thank you, Mr. Chair.

I want to thank my friend from Georgia, here, for letting me cut in line on the questioning.

General, good to see you again, and thanks for all you're doing. I think there's—safe to say, there's a lot of us who are glad you're in your—the position you're in. It's—I know it's a difficult challenge. Thanks for your service.

A lot of my colleagues on both sides of the aisle here have been talking about the importance of allies. I know you get it. I think we all get it, whether it's China or Russia, having our allies on board and expanding that network is really important. You have our full support on that.

I do want to respond to Senator Warren's comment. The second time in the last 2 days we've heard colleagues—and I have the utmost respect for my colleagues on the other side, particularly on this committee—about how the President needs to get his people out to get people in positions—Ambassadors, Assistant Secretaries. I agree. I think we could have, maybe, a little deal here among Democrats and Republicans. We'll encourage the White House to get more nominees out, but my colleagues on the other side can't complain about it, like Senator Warren was just doing, and then go to the unprecedented lengths that they have been doing to block and delay and make sure President Trump doesn't get his nomi-

nees confirmed. So, can't have it both ways, Senator Warren and others. So, we'll work with the President. When they come to the floor, let's move them, not unprecedented blocking, which has been happening, which doesn't help the country, doesn't help our national security, and it's a little hypocritical to be complaining, when, when they get to the floor, they never get moved. But, that's not your problem, that's our problem.

I'd actually like to talk about the Arctic. I know it's an area that you've been focused on. We appreciate that. There's a number of us, beyond just me, being from Alaska, who are concerned about it. How many bases in Russia—are the Russians building or refurbishing in the Arctic? Do you have a sense of that? Which would include their new Arctic military command. Can you talk a little bit about that?

General SCAPARROTTI. Yes. They're—essentially, the majority of this is refurbishing old bases, probably seven to nine; in particular, those that are at the beginning and the end of what is the Northern Sea Route across there. Those are the key places. We're watching that closely, in terms of militarization of the Arctic.

Senator SULLIVAN. What do you think their intentions are? Let me ask, are they installing any systems, including the fielding of major icebreakers, that would give them de facto control of the Northern Sea Route? Is that what they're trying to do, do you think? What are their——

Senator SULLIVAN. It—well, their——

Senator SULLIVAN.—intentions up there? They're clearly militarizing that part of the world. What do you think they're trying to achieve?

General SCAPARROTTI. Their stated intent is to provide safeguards, security for the economic well-being of the Arctic. It's a very—you know, their statement is along those lines. But, if you look at what they're putting into place, they would have the capability, I think, in some time, you know, perhaps 2 or 3 years, to control the Northern Sea Route, if they chose to do so.

Senator SULLIVAN. Do you think that's in the interests of the United States, that a country like Russia would have a de facto control over a new and potentially incredibly important line of communication through the world?

General SCAPARROTTI. No, I don't.

Senator SULLIVAN. So, in our Arctic policy that this committee recommended—or, actually, requested that the Secretary of Defense promulgate 2 years ago, we talked about the ability to control that sea route, to run FONOPs [Freedom of Navigation Operations] there. Are we falling behind, in terms of the capabilities that we have, vis-à-vis the Russians, to do that?

General SCAPARROTTI. We're not keeping pace.

Senator SULLIVAN. Thank you, General.

I wanted to ask another issue with regard to shortfalls that you may or may not have in the EUCOM AOR to counter and deter increasing Russian aggression. What's your thought of our shortfalls with regard to missile defense? How do we need to address that?

General SCAPARROTTI. We have capable missile defense systems. When you look at missile defense, though, I think the things that we need to focus on are—first of all, we need to focus again on

short-range and medium-range missile technology. We've—we have been operating in environments where we weren't—it wasn't a contested environment, et cetera. That's not the case any longer. So, we need to look at those systems. We need to look at the interoperability with our allies, because we can't do this in Europe without doing it correctly together. Then, we need to look at other parts of this, passive parts of our integrated air missile defense, as well. I—that's how I would answer that. I think it's a holistic system that we've got to put together, and it's the systems within the midrange that I am—and probably short-range—that I am most concerned about today.

Senator SULLIVAN. Okay. Thank you very much, General.

Senator INHOFE. Senator King.

Senator KING. Thank you, Mr. Chairman.

General, welcome to the committee.

First, I want to associate myself with the comments of Senator Sasse. I—we've talked about this a great deal. We really need to develop a cyber doctrine and a strategy in order to have a credible deterrent. I think that's one of the things that's lacking—prior administration, current administration. Let's just get it done. I hope you will take that message back. Because if all we do is try to defend—ultimately, as you know, the whole idea of your forces and the whole idea of our nuclear force is deterrence. We don't want to have to use them. We don't have a deterrent force, in terms of cyber. I think it's something that we certainly need to develop.

Do you agree, General?

General SCAPARROTTI. Yes.

Senator KING. Thank you.

It seems to me that what's going on—and we've had a series of questions about what the Russians are doing in Europe. I think it'll be interesting to learn whether they were involved in the recent Italian elections over the weekend. What we're seeing before our eyes is a kind of deunification of Europe. We've had Brexit, we've had a populist election in Italy. We've had a very difficult election in Germany. They—we know they attempted to interfere in the election in France. We're trying to—they're trying to split the countries. It strikes me that what they are doing is a kind of geopolitical jujitsu. My memory of judo and jujitsu was, you used your opponent's strength against them. Our strength is our freedom and our First Amendment and our free press and our open society. That's exactly what they are using in order to turn it back on us and to divide us, not only within countries, but also within the alliance. I presume you see this Russian activity all the time, from your position in EUCOM.

General SCAPARROTTI. Yes, sir, I do. I agree with your thoughts. I mean, a democratic government, the values that we profess, the freedom of the press, those kinds of things, those are the things that are vulnerabilities with respect to Russia's attack.

Senator KING. That's exactly what they're exploiting.

General SCAPARROTTI. That's what they're exploiting. That's what they're leveraging. So, I said, earlier in my comments, that it's important today that we not take for granted the importance of these values, our active—individuals' active participation as a member of a democracy to protect all of those things. There's a cer-

tain sense that I have, both here and in Europe, that we've kind of begun to take that for granted. Now it's being attacked. We have to think about it that way, and begin to come together to protect the values and our way of life——

Senator KING. I know.

General SCAPARROTTI.—because that's essentially what——

Senator KING. And it——

General SCAPARROTTI.—they've gone after.

Senator KING.—leads us back to the issue of some kind of strategy and doctrine that we can develop, not unlike NATO at the end of World War II, not unlike the strategy of deterrence that underlay our nuclear policy for 70 years, which has worked.

Let me change the subject for a moment. Javelins to Ukraine. Any concern about that leading to an escalation on the other side, particularly given the fact that Russia is so much more proximate to the battlefield? Give me your thoughts about that.

General SCAPARROTTI. I wouldn't say I had zero concern, but I—it's not a lot of concern, particularly because, if you look at the Russian proxies and the force structures, the kinds of equipment provided by Russia, the presence of Russian leadership and the proximity of Russian units on the border to eastern Ukraine, I can't see—I mean, they would obviously take advantage of this in information warfare to say that it's of concern to them. But, it should not be.

Senator KING. Do you—in the few seconds that I have left, your thoughts about the status of that conflict. It seems to be, at least from the point of view of our attention, in a kind of limbo, in a kind of standoff. Is that the situation?

General SCAPARROTTI. Well, you know, sometimes there will be those that add this to, kind of, the frozen conflicts that we see in Europe, particularly in the east. But, I would say it's not that. It's a hot war, yet. They take casualties on both sides, but particularly in Ukraine, you know, every week, to this date. We have seen the violence level go down, of late. But, I would tell you what you don't see is, within that lower violence level, it's less heavy artillery and more things like snipers, et cetera. So, the casualties haven't gone down. In fact, they've gone up a bit.

Senator KING. But, it's still a hot war.

General SCAPARROTTI. It's still a hot war. My personal opinion is, is that, although Russia states that it's Ukraine's problem that we're not moving forward with the Minsk agreement, et cetera, I think it's actually Russia who doesn't want it to move forward. They could certainly do more than they're doing today with respect of helping us move in the right direction, protection of the mission monitors, for instance, in the Donbass, which they don't help with at all, et cetera.

Senator KING. Final question, on a different subject. It could be a yes-or-no answer. You note, in your testimony on page 4, Russia is revitalizing its northern fleet, as you just discussed with Senator Sullivan, in anticipation of increased military, commercial activity. They intend to assert sovereignty over the Northern Sea Route, in violation of the U.N. Convention on the Law of the Sea. Would it be advantageous to our country for us to ratify the U.N. Conven-

tion of the Law of the Sea so that we could be a participant in those proceedings?

General SCAPARROTTI. Yes.

Senator KING. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Perdue.

Senator PERDUE. General, thank you for being here, and for your decades of service.

It—I want to talk about Russia just a minute, but particularly about Georgia and their intent there and our strategy there. It seems to me, when you look at their facilities in Murmansk, Kaliningrad, Sevastopol now, in the Crimea region, what they've done in Georgia, and now what they've done in Latakia and Tartus in Syria, I'm concerned about these frozen conflicts. I'd like to get your update on the Georgian frozen conflict. I guess we still call that a frozen conflict. What is—what's our posture there, and what's the long-term strategy regarding, specifically, Georgia, but also—you talked about the current situation in Ukraine. I'd love for you to also update us on your current thinking—the United States current posture with regard to Ukraine and Georgia, relative to what looks to be a solidification of Russia's positioning in a crescent around eastern Europe.

General SCAPARROTTI. First, Senator, with respect to Georgia, one, I would state that, as a partner—Georgia, as a partner, is a strong one. They provide forces in Afghanistan and others. Not a large country, but a good fighting force and a good partner. What we see there today, when you look into the two areas that Russians have presence, those breakaway portions of Georgia—Ossetia, et cetera—they are now working to bring them into, I think, you know, almost the Russian Federation, in the sense that you—what you begin to see is the use of Russian administration within those——

Senator PERDUE. Putin calls them independent states now, those two——

General SCAPARROTTI. He does, but it's not recognized internationally as——

Senator PERDUE. Right.

General SCAPARROTTI.—independent states, neither one of them. They call it that. I don't think there's more than maybe three nations, or four, in the world that accept his definition. But, my point is, what he's doing is, he's drawing them into their administration. In some of these countries—and I can't recall if Georgia is one of them—but, in some of those countries, for those areas that they have presence, they have declared those soldiers' either ability to become a part of the Russian Federation military forces or they have agreements that they would become a part of that if there were a conflict. So, you—my point is, you can just see them drawing them into their orbit.

Now, you asked about others. I think, if you go to Moldova or other areas where we have frozen conflicts, this is to their advantage, because they use that in order to help secure what they see as part of their strategic depth on the periphery. It points to their——

Senator PERDUE. Well, I apologize for interrupting, but——

General SCAPARROTTI.—area of influence.

Senator PERDUE. What is our strategy in those frozen conflicts? I'd like a brief answer, and then—because I want to ask a quick question on Israel as I—as you finish up.

General SCAPARROTTI. The—well, our strategy is—is, diplomatically, to stay very involved in a—different areas, whether it's OSCE [Organization for Secuirty Cooperation in Europe], Minsk, which is what it is for a couple of those, diplomatically, in order to resolve the conflicts and, at the same time, respect the sovereignty of the nations and the determination of the people involved, like in Nagorno-Karabakh [conflict between Armenia and Azerbaijan], for instance, their desire to determine their own government. We generally follow that track, but a better question for the diplomats who are working that.

In our regard, we have a relationship with each of these countries, where we help them with security reform and also capacity-building, because, in each case, they're looking to the West, and they would prefer to come to the West. Russia's continuation of this frozen conflict is one way that they freeze that ability of a nation to then look to the West for either NATO or EU.

Senator PERDUE. Thank you.

In the remaining time I've got, just a quick question about Iran and their increased activity in Syria. It seems that they've built a permanent base now outside Damascus that has a warehouse that's capable of storing missiles that could hit Israel. We know that they talk openly about a land bridge to—from Tehran to Beirut. The changing situation in Syria certainly raises questions, particularly with the latest aggression with the drone incident in Israel. How does that situation in Syria—Israel is part of your area of responsibility, if I understand correct, correct?

General SCAPARROTTI. That's correct, it is.

Senator PERDUE. What is the current situation? How do you assess that? What is your command's posture relative to the security of our ally, Israel?

General SCAPARROTTI. My mission in EUCOM with respect to Israel is to support the defense of Israel. In fact, we have a large contingent there today doing an—defense and rehearsing, basically, you know, those operations that we planned in defense of Israel, should it be needed. I'm going there tonight in fact. We continue to work closely with them in a defensive means, but also to stay very close to them with intelligence. As you know, they see Iran as an existential threat. They're concerned about the posture of Iranian forces or Iranian-supported forces in Syria, and perhaps that they might be intending to remain in Syria as this is resolved. They're concerned about the missile technology they believe maybe transferred from Iran to any of this—extremist organizations or the Lebanese Hezbollah to their north. We're watching this very closely with them. I agree that a land bridge, you know, between Iran—through into Syria would not be a good outcome.

Senator PERDUE. Thank you, sir.

Thanks, Mr. Chairman.

Senator INHOFE. Thank you.

Senator Gillibrand.

Senator GILLIBRAND. Thank you so much, General.

I want to continue the conversation you're having with my colleague. This week, more than 2500 United States personnel are taking part in EUCOM's Juniper Cobra missile defense exercise with the Israeli Defense Forces. According to Israeli media, this year's exercise will simulate a large-scale ballistic missile attack against Israel. Will the Arrow, Iron Dome, and David Sling missile defense system be involved in this exercise? Am I correct that this is the first such exercise since David Sling system went operational in April of last year?

General SCAPARROTTI. The—this will involve their systems as well as ours, and, in particular, the interoperability of those systems and the interoperability and the connection of our command-and-control systems. In terms of their system, specifically, if it's a new system—this is the first exercise that we've done, but I couldn't comment. I can come back for the record after I look at it. I'm going there this evening to spend a few days as we conduct this exercise.

[The information referred to follows:]

Juniper Cobra 18 was the first large scale ballistic missile exercise with Israel involving the David's Sling weapons system. As you noted, David's Sling declared initial operational capability in April of 2017. Prior to Juniper Cobra 18, we did conduct procedural training with the Israelis using the system and updated our operational tactics and procedures accordingly.

All three Israeli missile defense systems, Arrow, David's Sling, and Iron Dome participated in Juniper Cobra 18. From an operational standpoint, Arrow performed well in the simulation scenarios, as did David's Sling. Arrow and David's Sling operators conducted daily after action reviews of tactical performance to identify areas for improvement in communications and procedures. The IDF reviewed performance of the Iron Dome separately from the combined reviews conducted by United States and Israeli forces. However, these reviews focused on procedures and operator performance, not necessarily on how well the weapons system performed against its design specifications.

As to how the respective systems performed against their technical design specifications, I would refer you to the Missile Defense Agency which provided simulation support during the exercises and conducted a technical demonstration of new Arrow software during the field training portion of Juniper Cobra 18.

Senator GILLIBRAND. Do you think this exercise can effectively counter some of the threats to Israel?

General SCAPARROTTI. Yes, I think it does. It's a matter of deterrence. It's—it is making sure that those who may think about doing them harm knows that we have a credible and a expert defense that we can establish rather rapidly.

Senator GILLIBRAND. Have you discussed with Israel our commitment to maintaining their qualitative military edge?

General SCAPARROTTI. Yes. I support that. We work very closely. I would—it's—in terms of our daily activity, it's one of the closest nations with EUCOM.

Senator GILLIBRAND. Thank you.

Switching gears. Media reported that, on February 7–8, hundreds of Russian military contractors were killed when United States Forces and Kurdish allies repelled an attack against a base in eastern Syria. Based on what you have seen in Europe, how does Russia tend to use military contractors? What is your assessment of the goal of this attack? From your viewpoint in EUCOM, what do you believe Russia is trying to accomplish in Syria?

General SCAPARROTTI. I won't comment specifically on Syria that you noted. That's in CENTCOM's AOR. I would just say, generally,

that Russia is known, through their oligarchs or some businesses, to establish and use private military forces, which is what I'd call them—private military forces.

Senator GILLIBRAND. I was very interested in your exchange earlier about a Russian cyberattack. I understand, from many of your colleagues, that this is something that the President has not asked you to do. What recommendations would you make to the President to protect our country from a cyberattack that could harm American's vital infrastructure?

General SCAPARROTTI. First of all, I—you know, the President wouldn't—it wouldn't be normal that he'd provide direction directly to me at EUCOM at my level with respect to this topic. It would be CYBERCOM's area. CYBERCOM's Commander would be the best to give him best military advice. So, to that expect, I'd probably go to Admiral Rogers. Mine would be, if asked for best military advice, is that we continue to develop the capabilities we have. I think we have excellent capabilities. We need to consider what a deterrent effect we want or need to have. But, I would leave it very generally at that and go to the specifics to the person that he turns to normally, being the Secretary and, within COCOMs [Combatant Commands], the CYBERCOM Commander.

Senator GILLIBRAND. The NATO Secretary General has said that alliance members agreed that a serious cyberattack threatening critical military and civilian infrastructure could trigger article 5 of the NATO Treaty in the same way that a conventional military assault would. Is that—is this a possibility that your forces are training for, in cooperation with our allies? What can you tell us about any collaboration on this front?

General SCAPARROTTI. Yes. We train. We're a member of NATO. Within NATO, for example, you know, we are defining the domain, with U.S. as a part of that, and we've actually conducted exercises, one this past year that involved ambiguous cyber activity or attacks, that involved attacks on infrastructure, et cetera, in order to get right at your point. That is to get better clarity on attacks on infrastructure, when is that of—you know, an attack on a vital national interest? Then, how do we respond to that? There is, both the United States and within NATO at large, work on this very question.

Senator GILLIBRAND. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Scott.

Senator SCOTT. Thank you, Mr. Chairman.

Good morning, General. Good to see you again.

My concern—we've had a lot of conversation over the last several weeks about the state of Turkey and the region, and especially as a NATO partner of ours. Much of my concern has been focused on the fact that what used to be a very secular Turkey is moved in the direction of becoming a more religious Turkey, and the cultural shift seems to have had a significant impact on the behavior of Turkey. Can you walk me through your assessment?

General SCAPARROTTI. Well, I think that, in Turkey overall, there is a shift of some note, specifically within the government, perhaps to be a government that's more Islamist, based on its religion, than in the past. Perhaps you might say it's less secular. But, I think

it—the outcome of this remains to be seen. Most of this has happened just as a result of an attempted coup. President Erdogan has taken steps to, in his mind, secure his country and secure his form of government. I think we have to watch this and look a little deeper.

Having said all of that, I have routine conversations with my counterpart in Turkey and their security officials. We have a close mil-to-mil relationship. They're a valued member as an ally and as a NATO ally. We're going to continue to develop that relationship and strengthen it. I think that, too, can have an influence on the government as a whole and—because they intend—I am sure, they intend to remain a member of NATO that is based on the Washington Treaty and the values that all of us profess.

Senator SCOTT. Thank you, General.

Russia's violated the Open Skies Treaty, refused to implement the Conventional Armed Forces in Europe Treaty, and the Vienna document suspended the PMDA [Pharmaceutical and Medical Device Agency] while placing outrageous and unreasonable conditions on resuming and undermined the Chemical Weapons Convention through its support to Syria and its chemical weapons program. What conclusions do you draw from this record about the reliability of Vladimir Putin and the Russian Government as negotiating partners? I would just point out that the PMDA, from my research, suggests that the 34 metric tons that we had agreed to dispose of would lead each side to having about 17,000 metric tons, which could create multiple—thousands and thousands of weapons out of that weapons-grade plutonium.

General SCAPARROTTI. Well, the short answer is, I think, with the Russians, just based on what you walked through—and it's obvious to us, in terms of their treaties—is that we—I believe in the treaty system. I believe in nonproliferation and to continue our weapons control treaties that we have in place. But, we have to verify what they say they're doing. That's what it's based on. It's not a trust. It's verification.

Then, secondly, while they've stepped away from the CFE [Conventional Armed Forces in Europe] and others, and a violation of INF, I think we take steps, as this administration is doing, as the Secretary of Defense has laid out, that is using the different levers of power in order to bring them back into compliance with the INF Treaty, in particular. I think that's the right way to go.

I think we had spent some time where we weren't confronting them with either their violations of that treaty or some others, and we need to take a strong stand.

Senator SCOTT. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you.

Senator Blumenthal.

Senator BLUMENTHAL. Thanks, Mr. Chairman.

I have advocated, for some time, strong measures to deter and counter the blatant Russian aggression in Ukraine—and around the globe, the assault on democracies through cyber and disinformation. But, Ukraine is a blatant ongoing instance of physical force that violates standards of common decency and norms of international law. The obligation of the United States to provide le-

thal military assistance, I think is clear. I have advocated, for some time, and we've included it in the National Defense Authorization Act, the Department of State has cleared the sale of Javelin antitank missiles to Ukraine, which is a long overdue move to increase Ukraine's defense capabilities. Although lethal, these arms are, essentially, defensive in nature. Would you agree with me that more of these type of weapons are necessary to deter and counter Russian aggression against Ukraine?

General SCAPARROTTI. I think, for what we're providing of those types of weapons right now, I would personally—my best military advice—say let's put this into play. We've got training, et cetera, that we need to do. Then take a look at the situation from that point. There are more—there are—there is more, and there is equipment that they can use effectively that we in EUCOM will continue to advise Congress and provide our best advice for what will help them most.

Senator BLUMENTHAL. Let me ask a very simple question, which may be overly simplistic, but—Are we winning in Ukraine? Aren't the Russians effectively winning in accomplishing their objective?

General SCAPARROTTI. Yeah, that's—I mean, it's—depends on your definition of "win." I would say that we're not progressing, because our interest there is to resolve this conflict.

Senator BLUMENTHAL. If we're not progressing, we, meaning we and Ukraine, are losing.

General SCAPARROTTI. I don't know that I would say we're losing. I would say, again, we're not progressing. We're more or less at a stalemate in where we're at. If you look at Ukraine—the reason I would say we're not losing is, Ukraine's forces, for instance, are steadily getting stronger and much more confident. The nation itself is——

Senator INHOFE. Excuse me, General, let me interrupt for just a moment. Forgive me for this, but——

Senator Scott, presiding.

Go ahead.

General SCAPARROTTI. The government itself, in terms of the reforms that they want and we expect as well, is moving forward, not at the pace we want, but it is moving forward. I said—so, even within that conflict still residing, I think we're making progress in important ways, and we should continue to press in that direction.

Senator BLUMENTHAL. We're making progress, do you think, in countering the endemic corruption that has existed? Is that what you meant by "reforms"?

General SCAPARROTTI. That's part of it, yes. They just voted for their anticorruption law, the first vote of three they think they have to take. That law is not everything we wanted in it, but it's a step in the right direction, as well.

Senator BLUMENTHAL. Because 2 years ago, at this hearing exactly—this kind of hearing—I asked your predecessor, General Breedlove, about the issue of corruption. He acknowledged that there was a lot to be done, it was a very unfortunate problem. I wonder whether there's more that can be done by your command to counter it.

General SCAPARROTTI. It is still a problem, as I just noted, in the law. Between us and our interagency, particularly State, we con-

tinue to press. We've got—you know, we have personnel both in the mission there with the Embassy, but also a multinational joint committee that meets regularly, works with State and with the other nations that are involved, as well, in progressing both capability-building and the reform of their security institution. We need to continue to press in that regard. I think that there is more that can be done, in terms of other assets that we can bring to bear.

Senator BLUMENTHAL. I just want to note, finally, the—because I'm almost out of time—the fiscal year 2019 budget request includes increases for the European Deterrence Initiative and the Ukraine Security Assistance Initiative. There is 200 million for the Ukraine Security Initiative, 50 million above the President's request from the previous year. In addition, the President's asked for 6.5 billion for EDI, 1.7 billion more than last year. I assume—I hope that you would agree these investments in our defensive capability are important in Ukraine, because they demonstrate resolve against Russian aggression there, but also in Europe generally and around the world.

General SCAPARROTTI. I agree. They're foundational in Ukraine to the activity we have there and the progress that both we and their nation, and particularly their forces, are making.

Senator BLUMENTHAL. Thank you.

Thank you, General. Thank you for your service.

General SCAPARROTTI. You're welcome.

Senator SCOTT [presiding]. Thank you, Senator.

Just a couple more questions for you, General.

Angus, do you have any questions?

Senator KING. I just want to compliment the Chairman on his meteoric rise.

[Laughter.]

Senator SCOTT. As fast as you go up, you typically go back down, by the way, so you may see me in the corner. Yes, yes, yes. Realize that.

General, in my office, you and I had a robust conversation about the resources that you might need to make sure that we have the quickest response—rapid response is what I called it, not what you called it—in your command and your responsibilities. Can you perhaps remind me of the issues or the items that you would want to see included in the fiscal year 2019 budget so as to make sure that you have all the resources necessary to meet what we expect you to accomplish? Second, the problem of the anti-access aerial denial, or the A2AD, is a big one. But, if you can overcome it, it may help us avoid the escalate-to-dominate scenario. Which items in the budget request specifically help you become—deal with the A2AD problem?

General SCAPARROTTI. Yeah, thank you. I'll give you a general answer——

Senator SCOTT. Yes.

General SCAPARROTTI.—Senator, here. If you want more detail, I'd be happy to do this in a classified means, as well.

First of all, in terms of resources, generally if you look at our budget proposal and the way it's being used, I'd start by saying that, of those requirements that I have had, that this budget and the FYDP gets after virtually every one of those areas in some

means. I'm very appreciative to Congress for that. If I were to categorize them, I would start, as I said before, with command-control computers, information, surveillance, and reconnaissance, C4ISR, areas that have to do with integrated air and missile defense. There are, across each of the services, specific areas that I could give you in a classified vein, and then, lastly, munitions.

As you look at A2AD, or the anti-access area denial, problem set with respect to Russia, the combination of the services' requirements that I have laid out, as well as precision munitions, helps me with that second threat that you noticed—that you noted, of A2AD. The combination of those, together, I can underline those systems.

Senator SCOTT. Thank you, General.

Thank you, General, for your time. Hope you have a great day.

[Whereupon, at 11:26 a.m., the committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR DAVID PERDUE

TURKEY'S PURCHASE OF RUSSIAN S–400 AIR DEFENSE SYSTEM

1. Senator PERDUE. [Deleted].

General SCAPARROTTI. The Turkish decision to purchase the S–400, while regrettable, is not without precedent in NATO. Greece, for example, acquired the S–300 system during the 1990's and NATO successfully worked to limit any ill effects from the purchase. As mentioned, Turkey is working in accordance with NATO approved guidelines and the S–400 will not be allowed to connect to NATO command and control architecture. In addition, EUCOM and its components will follow already established guidance concerning foreign disclosure of assets and procedures as we would with any other foreign government.

As for the data that Turkey will use to make the system operational, a list of critical assets and prioritization of their defense would occur no matter which system Turkey chose to buy. As a NATO ally, Turkey would make these decisions in concert with their NATO partners. We are cognizant of the threat and will act proactively counter it.

2. Senator PERDUE. General Scaparrotti, do you believe that NATO assets will have to be moved from Turkey to other, safer locations?

General SCAPARROTTI. NATO is working with Turkey to ensure critical assets are protected from Russian influence during the S–400 initialization and instruction; this includes limiting Russian access by conducting the training outside of Turkey and evaluating the operational security for NATO assets located within the country.

Specifically related to the S–400 and the U.S. weapons for NATO's nuclear deterrence mission, there are no specific requirements for moving the weapons given the current situation. Under the arrangement described, Russian intelligence agencies would have the the possibility of collecting information on nuclear aviation operations including weapons movements and exercise requirements. There are additional factors related to engagements with Turkey in addition to S–400 that would necessitate a reevaluation of United States weapons for NATO's nuclear deterrence mission. EUCOM is actively working with the Office of the Secreatry of Defense, State Department, and the United States Embassy team in Ankara to address concerns regarding the S–400 purchase and United States nuclear weapons with the Government of Turkey (GOT) and Turkish Ministry of Defense.

3. Senator PERDUE. General Scaparrotti, is it possible for NATO to provide oversight during both the development and operational phases of the S–400 system to ensure that Russia does not collect valuable intelligence on our assets?

General SCAPARROTTI. It is possible; however, this quickly becomes a sovereignty issue. Turkey stated the S–400 system will be stand alone and not link to any other NATO system. For NATO to provide oversight, Turkey would have to invite NATO to participate. Any caveats levied by Turkey would further limit and restrict this cooperation. In the event Turkey would like to link the S–400 to NATO systems,

Turkey would have to adhere to the NATO guidelines regarding the development and operational use of the S–400 system.

EASTERN EUROPE ENERGY SECURITY

4. Senator PERDUE. General Scaparrotti, for many decades, the Eastern Europe has remained tethered to Russia by energy dependence, particularly through Russia's gas supply monopoly Gazprom. In 2017, Lithuania, among other European nations, received its first shipments of liquefied natural gas from the United States to help reduce dependence on. The pending Nord Stream II project, however, would build a pipeline between Russia and Germany and would double Russia's capacity to pipe gas across the Baltic Sea, possibly increasing Europe's overall energy dependence on Russia. From the military and defense perspective, what does energy dependence on Russia mean for the security environment of our NATO and European partners?

General SCAPARROTTI. I remain concerned by the reliance of Europe on Russian gas supplies for critical portions of their national energy needs. Last year, the Russian gas supplier Gazprom reportedly provided about a third of the natural gas consumed in Europe. Gas is used not just for heating and cooking, but also to generate electricity. While European natural gas consumption has fluctuated recently, the region's shift away from nuclear power and coal coupled with the decline in Europe's own gas production will lead to a renewed and increased demand. Despite increased imports of United States liquefied natural gas, these developments are likely to create additional opportunities for Russian leverage. Russia can use this dependence as a weapon in time of war, or as a diplomatic lever during a crisis threatening hostilities. In a crisis, interruption of Russian gas supplies would result in urgent demands on European governments to make good the deficiencies in energy supplies. Failure to do so would likely lead to civil unrest and political instability and could impact alliance unity.

Perhaps a more immediate concern, it's not just our allies who are exposed to Russian hostage-taking in the energy arena. United States forces in Europe depend on the same energy providers as their host nations. An interruption of Russian gas supplies in European countries that host United States forces would definitely impact our readiness, operations—and the families who accompany our servicemembers.

This vulnerability suggests that Europe's search for energy diversification will improve our security. Europe is looking to develop additional sources of carbon fuels as well as "green" sources such as wind, solar, hydro, and geothermal energy. Norway remains the second largest source of natural gas in Europe, and we can anticipate an increase in United States gas deliveries with the construction of LNG terminals in the Baltics, Poland, and elsewhere in the region. The more Europe diversifies their energy supply, the more they secure themselves from Russian coercion.

5. Senator PERDUE. General Scaparrotti, what role does EUCOM play in stabilizing energy security in Europe?

General SCAPARROTTI. Significant reliance on a single supplier for strategic commodities such as energy represents a vulnerability to allies and partners in the region in a number of areas. First, Russia has demonstrated a willingness to use energy supply disruption as a tool of leverage to affect partner and ally decision-making or as a punitive response to decisions made that are not aligned with Russian interests. Second, significant Russian presence, market share, and ownership in the energy sectors of partners and allies is often followed by illicit activities, bribery, and corruption that can alter government decision-making, for personal financial gain of those in positions of power, that will align with Russian interests and not necessarily those of their citizens. Third, European reliance on Russia could become a problem in a contingency environment if Russia were to cut off energy supplies (e.g. liquid fuels for military use). This would negatively impact NATO force readiness and mission capabilities. Without timely access to needed fuel supplies, we could experience a degradation in our ability to meet out our Article V responsibilities. Lastly, if NATO allies and partners experience significant energy supply disruptions due to a cutoff in Russian supplies, this would have a significant impact on civil society and a government's ability to provide basic services to its populations. The inability to provide basic services to a country's population has negative impacts on military readiness and overall national defense and security, particularly in an emergency situation. I am working to ensure energy supply diversification and enhanced energy security remain a priority for our partners and Allies.

6. Senator PERDUE. General Scaparrotti, what can EUCOM, along with the U.S. interagency, do to continue to assure our allies in the region and build security partnerships in relation to the energy sector?

General SCAPARROTTI. EUCOM and our interagency partners will continue to train and exercise with our counterparts to improve their ability to protect critical infrastructure—both physically and in the cyber domain. Confronting adversaries and new approaches to hybrid warfare is a critical challenge that we all face, and it requires a whole-of-government approach to ensure we are using all of the tools available to our national governments. A specific example of how EUCOM is working together to enhance energy security and resilience in Europe is the EUCOM-funded, Department of Energy executed program with Estonia, Latvia, and Lithuania to enhance electrical grid reliability and cyber security. This program increases their awareness of vulnerabilities and identifies opportunities to mitigate risks to the electric grid.

NATO DEFENSE SPENDING AND BURDEN SHARING

7. Senator PERDUE. General Scaparrotti, how can we ensure that defense spending across NATO and in EUCOM is as cost effective and beneficial to the entire alliance as possible?

General SCAPARROTTI. The NATO Defense Planning Process (NDPP) identifies capabilities that are required to meet the Alliance's level of ambition and then apportions capability target packages to Allies every four years to fulfill these requirements. These capability target packages are distributed according to the principles of "fair burden and reasonable challenge", meaning that each Ally is expected to deliver a set of capabilities that is commensurate with its size and composition of force and manage their national budgets to fulfill the quantitative and qualitative aspects of these targets on time. Internal to the Alliance, Allies report their progress on capability target package fulfillment through a rigorous, biennial Defense Planning Capability Survey (DPCS). The DPCS becomes the basis of bilateral consultations between the NATO International Staff and senior defense policy officials in capitols and then multi-lateral examinations at the Headquarters in Brussels. Both of these events are measures of accountability, and Allies hold each other accountable to ensure that resources are being adequately appropriated and used for the right purposes.

As Commander USEUCOM, I'm focusing the work of our bilateral cooperation on allies' NATO capability targets so that our Foreign Military Sales (FMS), Foreign Military Financing (FMF), and other theater security cooperation efforts are aimed at specific outcomes needed to ensure the entire NATO force is ready for success.

8. Senator PERDUE. General Scaparrotti, what other metrics are important to bear in mind when looking at the efficacy of NATO defense spending? Is the 2 percent goal arbitrary and unrealistic, as some European officials have claimed?

General SCAPARROTTI. Two percent as a goal first entered the burden sharing discussion at the Riga Summit in 2006 when the then-U.S. Ambassador to NATO, Victoria Nuland, called 2 percent the "unofficial floor" on defense spending for Allies. Since then, and especially in the context of the security environment that emerged in 2014 with Russia's invasion of Crimea, it has been a metric for gauging the general political will to prioritize defense investment within the overall context of national domestic agendas. It is certainly an imperfect benchmark that does not capture outputs (e.g. capability development and contributions to Alliance security), but its inclusion in the Defense Investment Pledge agreed to at the Wales Summit in 2014 was meant to be a meaningful step toward addressing the Alliance's structural problem of underfunding in a manner that would be achievable by every Ally and underscore Alliance solidarity. Despite any flaws of this metric, all Allies agreed to aim for 2 percent by 2024.

NATO Allies have agreed upon a set of indicators for providing a comprehensive picture of how and where Allies use their resources, which are all portrayed in an annual Metrics Report (see attached PO(2018)0135, "Input/Output Metrics for 2018 Onwards," 29 Mar 2018, pgs 1–2 to 1–4). In addition to defense spending, these metrics portray burden sharing from the aspect of NATO Capability Target delivery and contributions to operations, missions, and activities both within and outside of the NATO Framework. Some Allies contend that outputs matter more than inputs when it comes to assessing whether a Nation is pulling its fair share within NATO. In this regard, NATO leadership and the United States have agreed that all three aspects of burden sharing (the "3Cs": cash, capabilities, and contributions) are all relevant and important, but that the ability to achieve and sustain what is needed in capability development and contributions is underpinned by sufficient defense in-

vestment. 2 percent is not an exact representation of what may be needed for a given Ally to achieve its requirements for national defense and what is asked from NATO. 2 percent is a political commitment and reflects a general target that Allies have agreed to aspire to. As far as being achievable, the Wales Summit Communique notes that the Pledge on Defense Investment is meant to be achievable by every Ally, but political realities have certainly affected the credibility of certain plans for achieving 2 percent within a decade. Currently, 15 Allies are expected to reach 2 percent by 2024 and 22 Allies are expected to achieve the benchmark of allocating 20 percent of defense expenditure toward equipment modernization. We expect Allies to continue to strive toward meeting the Wales Pledge in full as a matter of meeting the challenges of the security environment and as a mark of Alliance solidarity.

9. Senator PERDUE. General Scaparrotti, while the 2 percent goal is important, it is also critical that our allies invest in real warfighting capability available to the alliance at the speed of strategic and operational relevance. How can the U.S. be more specific about what we believe the 2 percent should be directed towards?

General SCAPARROTTI. EUCOM's country objectives for each Ally are based on a prioritization of those countries' respective NATO capability targets. In addition, we believe that the 2 percent should be directed toward improving the overall readiness, interoperability, and usability of forces for high-end conflict. This will require, among other things, investment in training and exercises with Allies and partners, and significant resources toward improving the maintenance, spare parts inventories, and ammunition available for major equipment. After years of high operational tempo in crisis response operations, Allies need to commit substantial funds toward achieving a credible posture of deterrence and defense against a peer competitor.

10. Senator PERDUE. General Scaparrotti, how else, besides spending, can we measure the growth of NATO partnerships?

General SCAPARROTTI. Above all, we measure the growth of partnerships with Allies by measuring what those Allies are contributing to the security of NATO, specifically through contributions to operations, missions, and activities (e..g. Resolute Support Mission or training and capacity building in Iraq), financial contributions to NATO-managed trust funds, access and overflight agreements, or intelligence sharing. We see our Allied partnerships grow through improved interoperability and habitual participation in common exercises and training events, as well as through willingness to engage in NATO defense capacity and defense institution building efforts and opportunities.

QUESTIONS SUBMITTED BY SENATOR TED CRUZ

UKRAINE

11. Senator CRUZ. General Scaparrotti, the recent decision to provide United States lethal military assistance to Ukraine is a welcome policy shift. Ukraine's state-owned arms manufacturer UkrOboronProm (UOP) and its subsidiaries represent the bulk of the country's defense industrial base and coordinate Ukraine's defense export-import policies. Beyond providing lethal military assistance to Ukraine, should the United States also help develop the Ukrainian defense industrial base? If so, what is the most effective means of doing so?

General SCAPARROTTI. Ukraine has tremendous intellectual and industrial resources. As a sovereign nation, Ukraine needs a defense industry that is responsible to its national requirements and able to provide defense products and services at a price Ukraine can afford. The Office of the Secretary of Defense has the lead and the expertise in interacting with Ukraine's state-owned defense industry.

UKRAINE

12. Senator CRUZ. General Scaparrotti, Ukraine's indigenous capacity has the potential of producing the means for Ukraine to defend itself and conduct military operations against Russian aggression. The United States must help develop Ukraine's indigenous capacity to produce the means to defend itself and conduct military operations against Russian aggression. How can we incentivize United States defense firms to cooperate and partner with UOP in a way that contributes to the development of Ukraine's defense industrial base?

General SCAPARROTTI. EUCOM supports interagency efforts to drive Ukrainian reform processes, which build transparent, accountable systems within the Ministry

of Defense. As a part of our defense institution building efforts, we regularly provide advice on developing responsive and transparent defense planning, procurement, and sustainment systems. We fully agree that Ukraine must take advantage of its intellectual and industrial capacity in the defense sphere. The Office of the Secretary of Defense has lead for defense industrial matters and is better preprared to address UOP.

13. Senator CRUZ. General Scaparrotti, UkrOboronProm (UOP) is requesting U.S. support to have itself audited by a reputable and independent third party. The audit may help improve UOP's efficiency and laying the groundwork for reforms in the Ukrainian defense sector. In your view, can this audit achieve these objectives? What role should the United States play in the audit?

General SCAPARROTTI. We absolutely agree that reform of Ukrainian defense industry and UkrOboronProm is essential to the long-term efficiency and transparency of the Ukrainian defense sector. EUCOM fully supports the Office of the Secretary of Defense's leading role in this field, and we are prepared to include discussion of a UOP audit in coordination with the Ukraine Defense Reform Advisory Board.

LEBANON

14. Senator CRUZ. General Scaparrotti, over the last few months, there has been more and more comments from Lebanon's military leaders in which they have publically made threats against Israel. As the Times of Israel reported:

Lebanese Defense Minister Yaacoub Sarraf said Sunday that his country was prepared to defend itself if Israel launched strikes on its territory. The comments came after Prime Minister Benjamin Netanyahu said Israel had shot down an Iranian drone in its airspace, and would "act if necessary" against Iran and its proxies, including the Lebanese terror group Hezbollah. Sarraf told participants at the Munich Security Conference that he had lived with "an Israeli drone above my head for the past 15 years" but that his country has "no belligerent intent" against anyone. But, Sarraf said, "we will defend ourselves" and "we are for peace, yet we will not stand for any threat and we will not accept any aggression."

Another threat against Israel was made by the Lebanese Army Commander as well. As the Times of Israel reported:

"The Lebanese army commander has vowed to "confront any Israeli aggression, whatever that costs" amid increasing tensions over a border barrier Israel is building and a dispute over offshore gas. "I affirm again our categorical rejection of the Israeli enemy infringing on Lebanon's sovereignty and its sacred right to exploit all its economic resources," Reuters quoted Lebanese army quoted General Joseph Aoun as saying. "The army will not spare any method available to confront any Israeli aggression, whatever that costs," he said. United States acting Assistant Secretary of State David Satterfield has been in the region in recent days trying to mediate between Israel and Lebanon. The dispute is centered around a border wall the IDF is constructing along the boundary between the two countries, contested rights to offshore natural gas exploration, and Israeli warnings that Iran—through its proxy in Lebanon, Hezbollah—is turning the country into a forward base to manufacture rockets and attack the Jewish state."

These two examples are just from Lebanese military leaders and exclude many ongoing threats against Israel from Lebanon's political establishment. Given these comments, should we reconsider the continuation United States military assistance to the Lebanese Armed Forces (LAF)? If a conflict were to breakout, what is your assessment on the risk that United States military equipment being provided to the LAF could be used against Israel?

General SCAPARROTTI. The Lebanese Armed Forces (LAF) values its strong and enduring partnership with the United States Defense Department, and would be very unlikely to directly or indirectly sanction the transfer of United States-provided arms and advanced weapons systems to aid Lebanese Hizballah (LH) in a conflict with Israel. The LAF continues to see the United States as the preferred supplier of arms and advanced weapon systems, trainer and partner over the long-term; moreover, the LAF likely recognizes that supporting LH in the event of conflict with Israel would be met with a strong and swift reaction from United States policymakers that could endanger the future of this bilateral security relationship for years to come. However, given the LAF and LH continue to vie for primacy over which is considered the defenders of Lebanon, the LAF may feel compelled to respond to defend Lebanon in a crisis with Israel, particularly if the populace is put at risk. Ultimately, how the conflict unfolds will be the determining factor in the LAF response, though under virtually all scenarios, we envision little potential for

direct LAF cooperation with LH conventional forces. Nonetheless, we are concerned about LH's efforts to infiltrate and influence Lebanon's intelligence and internal security institutions and have made clear that any cooperation with LH will risk our continued cooperation and assistance.

15. Senator CRUZ. General Scaparrotti, Hezbollah is further establishing and strengthening its presence and control in Lebanon. It now has close to 150,000 rockets and missiles aimed at Israel, whose fighters now are beginning to return to Lebanon with combat experience from the Syrian civil war and/or are remaining in vSyria to help Iran establish a land bridge to the Mediterranean and a permanent military presence on Israel's borders. In addition, Qais al-Khazali, the commander of Iraq's Iranian-backed Asaib Ahl al-Haq militia, visited the border between Lebanon and Israel in December 2017. What specific steps and actions are the Lebanese Armed Forces (LAF) taking to combat, and counter Iran and its terrorist proxies including Hezbollah from expanding its control and strengthening its military presence in Lebanon and the Lebanese-Syria border?

General SCAPARROTTI. Lebanon's response to the turmoil in Syria has been a policy of regional dissociation. Beirut regularly criticizes Hizballah's Syria deployments as undermining the Lebanese state, but has demonstrated limited recourse outside of the mostly public rhetoric and private recommendations. Much of this is attributable to Hizballah's increasing influence within Lebanese politics and the "blocking third" it has held in Lebanese Cabinet since the early 2000s. This has allowed Hizballah to effectively veto any potential legislation that could impact its strategic interests (e.g. keeping its weapons as a recognized domestic militia).

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

AIR AND MISSILE DEFENSE (AMD)

16. Senator SHAHEEN. General Scaparrotti, I am aware that General Brooks, Commander, United States Forces Korea (USFK) has submitted requirements to improve the vertical and horizontal integration of air and missile defense systems on the Korean Peninsula. Have you submitted an urgent needs statement similar to USFK's Joint Emergent Operational Needs Statement to the department to address any capability gaps you may face?

General SCAPARROTTI. I have not submitted an Operational Needs Statement similar to USFK's requirement to improve the vertical and horizontal integration of air and missile defense systems. I have, however, submitted two Joint Urgent Operational Needs Statements that the Joint Staff is currently assessing for resources, but they seek capabilities in areas other than air and missile defense.

17. Senator SHAHEEN. General Scaparrotti, I understand that United States European Command (EUCOM) has explored upgrading its European Phased Adaptive Approach (EPAA), otherwise known as Aegis Ashore sites in Romania and Poland. Would the EUCOM benefit from leveraging the capabilities of the Navy's DDG–51 Flight III program (possible inclusion—that includes the navy's new Integrated Air and Missile Defense Radar, SPY–6)? If so, what is the plan/path moving forward to provide EUCOM these increased capabilities?

General SCAPARROTTI. The AN/SPY–6 radar, installed on the Navy's Flight III DDGs, represents dramatic sensor improvements to the Aegis weapons system in the areas of detection range, search volumes, discrimination capability, raid capacity and complexity, and resiliency in high-clutter and jamming environments. EUCOM would welcome these improvements to the Aegis Ashore sites and our Forward Deployed Naval Forces (FDNF) Aegis Ballistic Missile Defense (BMD) ships stationed in Rota, Spain. EUCOM registered the need for this increased sensor capability in our "USEUCOM Operational Requirements Statement for the BMD of Europe," on January 5, 2017, and perennially in our Integrated Priority List (IPL) submissions. The Services are working to provide increased sensor capability to EUCOM.

QUESTIONS SUBMITTED BY SENATOR CLAIRE MCCASKILL

EUROPEAN DETERRENCE INITIATIVE (EDI)

18. Senator MCCASKILL. General Scaparrotti, last year Mr. David Ochmanek of the RAND Corporation testified before this committee that there was a need to have three present Armored Brigade Combat Teams (ABCT) in Europe, with sufficient supporting artillery, to effectively deter potential Russian aggression.

Do you agree with the assessment that there is a need for increase in military personnel in Europe, if so, how many and what types of units would you place in Europe, and is DOD making efforts to increase the number of units?

General SCAPARROTTI. USEUCOM is currently assessing the implications of the new National Defense Strategy (NDS) and its impact on our force posture in Europe. As we continue to understand the requirements to develop a credible blunt layer as described in the NDS, we are assessing the right mix of capabilities required and whether those capabilities need to be persistent (either assigned to USEUCOM or heel-to-toe rotational), episodic, or provided by our NATO Allies. Pending our complete assessment, it is likely USEUCOM will identify additional units required persistently to generate a blunt layer, and I am on record that I believe I need a minimum of a Division's worth of armored forces in theater.

19. Senator MCCASKILL. General Scaparrotti, we are now rotating units in and out of Europe and looking to potentially increase the number of units in Europe. Has the DOD done the analysis of the cost benefit of using rotating forces versus permanently stationing units in Europe? If not, why not? If so, what did the analysis conclude?

General SCAPARROTTI. The Department is currently studying the costs and benefits of forward stationing versus rotating forces in Europe, especially considering the Dynamic Force Employment and Global Operating Model concepts introduced in the 2018 National Defense Strategy. That analysis is ongoing and no conclusions or decisions have been made.

20. Senator MCCASKILL. General Scaparrotti, you stated in your testimony that you need another ABCT. Currently the Army in its modernization efforts to stay ahead of near peer competitors like Russia. One of the modernization efforts has been testing and fielding of Active Protection Systems (APS). Is the current rotational ABCT equipped with APS and should EUCOM receive another ABCT will it being given priority to be fielded with APS? If so, how will that impact getting the unit trained, equipped, and into Europe? What efforts are being taken to modernize the 2nd Stryker Cavalry Regiment with APS?

General SCAPARROTTI. USEUCOM believes that increasing the lethality of the units and prepositioned equipment in theater is critical to our ability to compete and win against a near peer competitor. In our fiscal year 2018 EDI submission, approximately $170 million of the funding that has been authorized for Army Prepositioned Stocks (APS) will go toward outfitting one Armored Brigade Combat Team (ABCT) of M1 Abrams and one Battalion of Stryker vehicles with Active Protection Systems.

The Army has identified a shortfall in resourcing the outfitting of the Stryker vehicles meaning that only 70 percent of the vehicles will receive the upgrade. USEUCOM worked with Army to develop a fiscal year 2019 European Deterrence Initiative (EDI) proposal to outfit the remaining 30 percent of the Stryker Battalion as well as one Battalion of Bradley Fighting Vehicles with Active Protection Systems, however the majority of those funds were not requested in fiscal year 2019 due to concerns with the program. The Department has requested $50 million within the APS budget line that represents the minimum level contingent on future developmental testing results.

QUESTIONS SUBMITTED BY SENATOR RICHARD BLUMENTHAL

UKRAINE: RUSSIAN ELECTRONIC WARFARE

21. Senator BLUMENTHAL. General Scaparrotti, it is clear that Russia believes they can use Ukraine to test and refine their cyber warfare capabilities with impunity. I am encouraged by news that DARPA is partnering with Ukraine to develop capabilities to counter Russia. I understand that EUCOM is facilitating these efforts. What can you disclose about these efforts?

General SCAPARROTTI. UCOM is not part of, and has not received information on, the DARPA–Ukraine counter-Russia partnership.

22. Senator BLUMENTHAL. General Scaparrotti, what lessons have you learned from this partnership that can be applied to countering disinformation campaigns in the United States?

General SCAPARROTTI. EUCOM is not part of, and has not received information on, the DARPA–Ukraine counter-Russia partnership.

23. Senator BLUMENTHAL. General Scaparrotti, do you agree that Russia must pay a steeper price for its cyberattacks, both against Ukraine and the United States? Do you agree that our actions so far have not made them realize that they have more to lose than gain with their behavior?

General SCAPARROTTI. All state and non-state actors must be held accountable for their activities, including Russian state-sponsored cyber actors. To deter Russian activities and limit their freedom of action within the cyber domain, we must adjust the benefit to consequence model. Deterrence of Russian activities requires a whole-of-government approach in concert with our Allies and partners, and this deterrence may require additional consequences for malicious activities.

As ADM Rogers highlighted in his testimony on February 27, 2018, Russian-backed cyber actors are active in both the United States and Ukraine; our reactions to date have not deterred their activities.

24. Senator BLUMENTHAL. General Scaparrotti, in your testimony you note EUCOM is strengthening efforts to counter Russian activity through support for the interagency Russian Information Group that counters Russian propaganda and misinformation campaigns. Can you please expand on this group's work and your involvement?

General SCAPARROTTI. [Deleted.]

UKRAINE: MILITARY ASSISTANCE

25. Senator BLUMENTHAL. General Scaparrotti, the Department of State has cleared the sale of Javelin anti-tank missiles to Ukraine—a long overdue move to increase Ukraine's defense capabilities. How do you see this provision of defensive weapons to Ukraine impacting the conflict? Do you agree more should be provided? What resources and steps are needed—beyond lethal aid—to strengthen Ukraine's long-term stability?

General SCAPARROTTI. EUCOM appreciates the support of the Congress in providing financial resources to augment Ukraine's self-defense capabilities. We believe that the provision of enhanced defensive assistance is an important signal of United States support to Ukraine and addresses a capability gap identified by the Multinational Joint Commission for Security Cooperation and Defense Reform in Ukraine. Ukraine's military forces are bravely defending their own nation against Russian aggression. At the same time Ukraine has outlined an ambitious reform agenda for its Ministry of Defense and General Staff to meet NATO standards. EUCOM, with other nations participating in the Multinational Joint Commission (MJC), delivers training, advisory efforts, and equipment to Ukraine with resources provided by the Congress. We work closely with Ambassador Yovanovitch, the Embassy team, the Office of the Secretary of Defense, and the State Department to ensure optitimal impacts for those resources. Our efforts focus on assisting Ukraine in developing responsive training and training management systems to provide ready forces for national defense. In addition, we continue to focus resources on assisting in the development of agile and capable command and control systems, situational awareness, long-term planning and resourcing systems, and improving Ukraine's logistical and medical capabilities. EUCOM represents only a part of a tremendous interagency effort to support Ukrainian reform activities, and the State Department and Office of the Secretary of Defense have important perspectives on strengthening Ukraine's long-term capability.

26. Senator BLUMENTHAL. General Scaparrotti, endemic corruption in Ukraine continues to undercut legitimacy, and stretches to the military. Just last month, the New York Times reported that while Ukraine's defense industrial base has grown exponentially since 2014, the increase in military spending has opened up new avenues for self-dealing and insider deals that hinder anti-corruption efforts. Two years ago at this hearing, I asked your predecessor Gen Breedlove about the issue of corruption and he acknowledged it was a problem. How concerned are you regarding EUCOM's ability to help stabilize and build capacity in Ukraine when corruption remains rampant? In what ways can EUCOM work to address it?

General SCAPARROTTI. European Command continues to collaborate with other nations via the Multinational Joint Commission on Security Cooperation and Defense Reform to identify areas of cooperation with the Ukrainian Ministry of Defense and General Staff.

Corruption remains a challenge in Ukraine. As a part of our work and our cooperation with the U.S. Embassy, we work with the Ministry of Defense's Reforms Committee to assist the Ministry of Defense in building transparent and accountable systems across the Ministry and General Staff.

As an example, along with the Defense Security Cooperation Agency, we provide expert advice to Ukraine through the Ministry of Defense Advisor program, to include areas like human resources and budget management. We also have a strong defense institution building program that works closely with Ukrainian counterparts to develop stronger and more transparent long-term planning programs. These efforts have assisted the Ukrainians in better understanding the relationship beween strategy, requirements, and resources and have set the groundwork for improved responsiveness and accountability.

We agree that Ukraine must continue to move forward on key reforms as the Congress has outlined in the National Defense Authorization Act. Passage of a Law on National Defense that outlines roles and missions and accountability to the Parliament is an important step. We believe that Ukraine continues to needlessly classify budgetary and program information in a manner that hampers reform. However, we also recognize that in a short time Ukraine has made important steps forward at a critical time for this nation, and we will continue to support reform efforts going forward.

27. Senator BLUMENTHAL. General Scaparrotti, the fiscal year 2019 budget request includes increases for the European Deterrence Initiative (EDI) and the Ukraine Security Assistance Initiative. There is $200 million for the Ukraine Security Assistance Initiative, a $50 million increase above the President's request from the previous year. In addition, the President has asked for $6.5 billion for EDI—$1.7 billion more than just last year. Can you describe how these increases will be used to counter and deter Russia? Will this address its cyber operations?

General SCAPARROTTI. EUCOM greatly appreciates the continued strong Congressional support for the European Deterrence Initiative (EDI). EDI has provided critical supplemental funding to establish a credible United States posture to deter Russian aggression and assure our NATO Allies and partners in Europe. Our fiscal year 2019 submission continues to build on many of the larger initiatives that are in the fiscal year 2018 authorization, including: Army Prepositioned Stocks (APS); European Contingency Air Operations Set Deployable Air Base Systems (ECAOS DABS); ECAOS infrastructure upgrades at existing United States and partner airfields; heel-to-toe Armored Brigade Combat Team (ABCT) rotations; and, Special Operations Forces (SOF) equipment prepositioning.

Although fiscal year 2019 EDI does include funding for Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance (C4ISR) that contribute to backbone requirements in the cyber domain, as well as funds that contribute to countering Russian malign influence in multiple information domains, fiscal year 2019 EDI does not request funding specifically for offensive or defensive cyber capabilities. The additional $1.7 billion in fiscal year 2019 EDI will allow EUCOM to expand our deterrence capabilities in: theater antisubmarine warfare via undersea sensor systems and additional P–8 contigency locations; Navy prepositioning for contingency logistics hubs and munitions storage; additional lethality and speed in APS via Multiple Launch Rocket System upgrades, configured-for-combat sets, and European road compliance upgrades; munitions starter stocks in JASSM–ER and Patriot MSE; and, Defense Logistics Agency Distribution Center for enhanced contingency distribution capability.

The initial fiscal year 2018 budget requested $150 million for the Ukraine Security Assistance Initiative; however, the Department of Defense (DOD) revised the request to the current $200 million for fiscal year 2018, which now matches the fiscal year 2019 request. DOD requested the additional funds because the $150 million was not sufficient to address the train, equip, and advise efforts to build Ukranian capacity to defend its sovereignty and territorial integrity against Russian aggression. In 2017, the Multinational Joint Commission assessed and prioritized the following key capability gaps for Ukraine: NATO-standard training and institutional reforms in support of force generation for territorial defense and other missions; secure communications at the tactical and operational level; secure national-level command and control systems; military medical capabilities for the rapid evacuation and treatment of casualties and rehabilitation following injury; situational awareness systems (e.g., counter-artillery radars) to ensure secure borders and to protect troops from indirect fire and unmanned aerial systems; optics and night vision capabilities to conduct all weather and 24-hour defensive operations; and advanced defensive anti-armor capabilities. Without the additional funding to meet these capability gaps, I believe there will be a negative impact on our ability to assist in developing a sustainable and effective Ukrainian capacity to generate and deploy appropriately manned, trained, and equipped forces.

RUSSIAN SUBMARINES

28. Senator BLUMENTHAL. General Scaparrotti, the increased presence of Russian submarines in the Greenland, Iceland, and UK (GIUK) gap requires the full attention of the United States and our allies. In December, the Washington Post published an article about increased Russian submarine activity near these cables and the British military has raised alarms over this as well. How are you working to address the vulnerability the GIUK gap presents? How can the United States prevent Russian submarines from exploiting it? Is the United States and its allies doing enough to ensure Russia does not gain a strategic advantage in this region?

General SCAPARROTTI. The increased presence of Russian submarines in the Greenland, Iceland, and UK (GIUK) Gap has the full attention of the United States and our allies. The United States has been working with and through its allies to counter the increased Russian submarine presence in the GIUK gap and to ensure that Russia does not gain strategic advantage in this region.

The United States and NATO responded to the increased Russian submarine activity by bolstering forces at sea and anti-submarine warfare (ASW) efforts. The U.S. is looking to improve sensors, sonar, weapons control, quieting technologies, undersea drones, and communications systems to help our submarines maintain their edge. The United States Navy has been upgrading hangars in Iceland to accommodate new P–8A Poseidon aircraft and the United States and Iceland have agreed to increase rotational operations in the GIUK gap this year. An example of recent activity to counter the Russian submarine threat was the deployment of multiple aircraft, to include eight United States aircraft, as well as planes from Germany, France, Norway and Canada, to RAF Lossiemouth in Scotland between January and November 2017. These aircraft conducted ASW operations aimed at detection and deterrence of Russian submarines operating in the GIUK gap.

In addition, NATO allies are helping the UK monitor Russian submarine activity following a huge increase in Russian underwater maneuvers. NATO will expand its British naval command post in Northwood, North London by 100–200 staff this year due to the increased activity. In concert with this, countries affected by this malign activity have perused their own responses to counter this threat. For example, the UK has robust maritime surveillance in place and has purchased a new fleet of P–8 Poseidon aircraft that will patrol the GIUK Gap starting in 2020.

29. Senator BLUMENTHAL. General Scaparrotti, what do you assess Russia's intentions to be with their activity near undersea cables? How concerned should the United States be? Have you discussed this issue with our allies?

General SCAPARROTTI. Academic research appears to indicate that the Russian military believes victory in future warfare depends on disrupting adversary information systems while protecting their own. Russian information warfare writings claim that 95 percent of United States military communications now use the same lines and infrastructure as civilian communications. Russian military thinkers and planners assert that United States military and economic prowess relies on assured information superiority, which, in turn, requires high-speed transoceanic data transfer and automatic control systems. According to Russian writing, targeting communication transmission systems offers the most effective way of causing the collapse of critical adversary war-fighting and governmental command and control systems, financial transactions, financial institutions, and the economy. Industry data shows that Russia does not significantly rely on international seabed cables.

Russia puts a premium on capabilities that it believes can rapidly undermine United States confidence and war-fighting capability or cause major distractions, such as economic crises during a serious confrontation, thereby helping decrease United States incentives for pursuing conflict. Most Russian military planners and theorists see assured information superiority as essential for successful American military action and assert that Moscow must be able to eliminate or seriously degrade this advantage.

The speed and capabilities of undersea cables vary widely depending on region. Undersea cables are primarily owned and operated by foreign cable owners, telecommunication services providers, and the maritime service sector. The Atlantic Ocean bears a high volume of modern undersea cables that provide communications services between the North American and European continents. The latency—the time it takes for data to traverse the network—limits the industry's ability to restore communications by rerouting data over alternative cables and causes disruptions to critical services dependent of timely transfer of data, in the event of a major transatlantic outage.

In the event of such an outage, the United States would need to transfer data over Pacific and Indian Ocean cables, and then to Europe. The data would take ap-

proximately 10 times longer to reach its destination, resulting in widespread service disruptions.

We have and will continue to discuss this issue with Allies.

ISRAEL

30. Senator BLUMENTHAL. General Scaparrotti, the United States must continue to strengthen its relationship with Israel through ongoing security cooperation. Just this week, the annual joint United States-Israel military drill "Juniper Cobra" began in Israel—involving more than 2,500 American troops and 2,000 Israelis. Can you provide an update on how this year's Juniper Cobra drill is progressing in its early days? What do you hope to achieve or learn this time around?

General SCAPARROTTI. Juniper Cobra 2018 (JC18) began on March 4, 2018 and concluded on March 15, 2018. United States forces integrated with Israeli forces to train for the combined defense of Israel against a ballistic missile attack. United States forces were able to integrate Aegis, Patriot and Terminal High Altitude Air Defense missile defense systems into Israeli defensive systems. Additionally, the United States conducted a crisis resupply exercise, a mass casualty medical exercise, and a combined United States–Israeli Patriot missile live fire exercise. JC18 was an overwhelming success and enabled our forces to practice integration into the Israeli air defense architecture, refine our combined standard operating procedures, exercise our reception, staging, onward movement and integration processes and train for the logistical support of deployed forces. While simultaneously exercising the defense of Israel, JC18 allowed United States forces to conduct a computer simulated exercise focused on the evacuation of non-combatant civilians from Lebanon. Collectively, JC18 allowed both United States and Israeli forces to exercise and refine defensive tactics, techniques, and procedures and identify gaps and seams in our capabilities. JC18 was USEUCOM's premiere military exercise for fiscal year 2018 and demonstrated the United States' commitment to the defense of Israel and to the overall stability of the region.

31. Senator BLUMENTHAL. General Scaparrotti, how else is EUCOM working to strengthen cooperation with Israel in an increasingly conflicted region?

General SCAPARROTTI. UCOM frequently engages, with all levels of leadership, to strengthen our already solid relationship and partnership with Israel, one of our longest standing partners in the Levant region. We maintain cooperation and dialogue at the highest levels of the command. Additionally, we conduct a series of exercises with Israel, the scope of which I intend to expand to incorporate CENTCOM and SOCOM.

My deputy commander, Lieutenant General Timothy Ray, has met recently with his Israeli, CENTCOM, and SOCOM counterparts to discuss expanded planning opportunities. These discussions focus on countering Iranian malign influence in Lebanon, Syria, and Yemen. The government of Israel has clearly signaled that continued Iranian expeditionary operations in these countries is an unacceptable risk that demands action. EUCOM and CENTCOM planners are working with the Israel Defense Forces (IDF), within United States policy and authorities, to develop options that will maximize the unique access, placement, and capability of each partner to act on this threat.

As I work with CENTCOM and SOCOM to expand our relationship with Israel, and since EUCOM is responsible for managing the military-to-military relationship with Israel, I have asked my team to re-examine the Strategic Cooperation Initiative Program (SCIP) to ensure that our myriad complimentary efforts progress toward well-developed and combined goals. In so doing, we will synchronize regional efforts among three combatant commands and Israel.

Our future planning with Israel is principally based on guidance from the Chairman of the Joint Chiefs of Staff and a directive from the Secretary of Defense. EUCOM has also begun planning for our next iteration of Juniper series exercises, which will rehearse assistance to the Defense of Israel. I will seek to incorporate CENTCOM and SOCOM into future Juniper series exercises. The operational environment to Israel's east has changed greatly in the last two years. As such, a successful United States contribution to the defense of Israel requires a hard look at the role of CENTCOM and SOCOM in the future of Israel's defense. As these expanded defensive planning efforts progress, we will include the Government of Israel to the greatest extent possible without inadvertently emboldening unilateral Israeli action.

QUESTIONS SUBMITTED BY SENATOR JOE DONNELLY

EUCOM COOPERATION WITH ISRAEL

32. Senator DONNELLY. General Scaparrotti, last year you testified in great detail about the importance of the EUCOM mission to assist in the defense of Israel. There has been important cooperation between United States and Israeli forces this year, including through the Juniper Cobra missile defense exercise. What cooperative activities are you planning with Israel for the coming year?

General SCAPARROTTI. I would like to clarify that Exercise Juniper Cobra 18 rehearsed more than just the United States support to the ballistic missile defense of Israel. We took a multifaceted approach to exercise the entirety of our plan to assist in the defense of Israel. This included logistical support through our crisis resupply program and rehearsed the release of War Reserve Stocks for Allies—Israel. Additionally, my team incorporated combined training between Israel Defense Forces (IDF) and the United States Marine Corps' 26th Marine Expeditionary Unit.

Our next major training exercise with Israel will be in February/March of 2019 named Juniper Falcon 19. It will exercise scenarios similar to those in Juniper Cobra 18 and will incorporate lessons learned from this year's exercise while focusing on the nascent stages of potential regional conflict. Planning for this exercise will take place throughout 2018 via a sequence of combined conferences. We also maintain a series of events dedicated to missile defense and testing led by United States Air Forces Europe (USAFE) and United States Army Europe (USAREUR). These events are designed to improve our partnered capacity and capability in missile defense. Each service component conducts rhythmic exercises with Israeli counterparts. USAFE participates in the Israel Air Force-hosted Exercise Blue Flag, which tests the interoperability of regional air forces' tactics, techniques, and procedures. United States Naval Forces Europe (NAVEUR) conducts annual Search and Rescue, Explosive Ordinance Disposal, and dive-salvage exercises on a rotational basis. USAREUR will exercise airborne assault operations with the IDF's parachute regiment during Exercise Sabre Strike in June 2018.

We continue combined dialogue with the IDF through the Strategic Cooperation Initiative Program (SCIP), which includes elements of U.S. Central Command, U.S. Special Operations Command, and the Joint Staff to the greatest extent possible. Through the SCIP, we plan our combined events and discuss complimentary planning efforts. There are at least 12 such engagements already planned in the third quarter of fiscal year 2018.

Lastly, I should note that we maintain dialogue at the highest levels with our IDF partners. I regularly meet with my IDF counterpart, Lieutenant General Gadi Eizenkot, members of his staff, and General Joseph Votel, Commander, USCENTCOM, to discuss progress and stability in the Levant region. In fact, I last met with Lieutenant General Eizenkot and his staff on 11 March. My Deputy Commander, Lieutenant General Timothy Ray, conducts similar events with his USCENTCOM and IDF colleagues. His next meeting with our IDF partners is scheduled at the end of May 2018.

QUESTIONS SUBMITTED BY SENATOR MAIZE HIRONO

NATO REORGANIZATION—TWO NEW COMMANDS

33. Senator HIRONO. General Scaparrotti, NATO has undertaken a reorganization to proactively combat Russian aggression. Part of this reorganization includes two new operational commands focused on moving allied forces back and forth across the Atlantic Ocean, and moving with greater speed around Europe. The two new commands are reported to be a joint forces and a logistics support command.

What is the status of the reorganization and what are the strategic implications and benefits of the new commands?

General SCAPARROTTI. On 14 February 2018, at the meeting of NATO Defense Ministers in Brussels, Secretary Mattis announced the United States will lead the establishment of a new Joint Force Command for the Atlantic (JFC–Norfolk). Detailed implementation planning is underway and work on the new JFC concept has been initiated with the office of Chief of Naval Operations in the lead. Close coordination is being conducted with NATO's Strategic Commands (Allied Command Operations and Allied Command Transformation) and USEUCOM in order to define mission, roles, responsibilities, and authorities. This JFC will provide NATO with the capacity to plan and conduct operations in the North Atlantic ensuring sea lines of communication between North America and Europe are protected. This reinforces Alliance deterrence and ensures a ready defense when needed.

NATO Defense Ministers also approved the establishment of a new support Command for logistics, reinforcement and military mobility. Germany will lead its establishment. Germany has also initiated its work on a concept for the mission working closely with the NATO Strategic Commands. This new Joint Support and Enabling Command will provide NATO with the capacity to secure the timely movement of troops and supplies to where operationally required to preserve deterrence and defend if necessary.

34. Senator HIRONO. How will the two new commands impact readiness and training?

General SCAPARROTTI. Both commands, the Joint Force Command for the Atlantic and the Support Command for logistics, reinforcement and military mobility will contribute to NATO readiness and speed the ability of the Alliance to respond. They will improve NATO's ability to command and control forces, enhance capability for planning, establish their proficiency and certification through exercising, and maintain relationships with the other relevant NATO Command and Force structures. In this way, they both will improve Alliance readiness and training and ensure a credible deterrence and defense posture is maintained.

CYBER SECURITY—NATO CYBER CENTER PLANNED

35. Senator HIRONO. General Scaparrotti, we are aware that Russia has conducted cyber operations in various countries including the Ukraine and Montenegro, by attacking military communications, secure databases, election infrastructure, as well as power grids. Another reported priority of NATO is the establishment of a new cyber center, one that is intended to bolster defenses against Russian intrusions to power grids and misinformation campaigns.

What are some of the lessons learned in terms of what has worked to effectively combat Russian cyber operations in Europe?

General SCAPARROTTI. The most important lesson learned by both USEUCOM and NATO is that the United States, Allies and partners must demonstrate both the ability and the political will to combat Russian activities in cyberspace. Our ability to deny Russian cyber actors access to critical systems relies on information sharing and implementation of cybersecurity best practices to minimize exposure and risk to critical systems. Information sharing is a cornerstone of effective cyber security and relies on close and open relationships between Allies and Partners. Once identified, indicators of compromise must be disseminated to deny Russian cyber actors the ability to use the same techniques multiple times. This information shapes cyber security best practices, including the maintenance, protection, and defense of both government and private networks. Well maintained networks provide a significant obstacle to Russian cyber actors, raising costs and resources associated with successfully attacking Allied or Partner networks.

36. Senator HIRONO. General Scaparrotti, what is the current status of the cyber center?

General SCAPARROTTI. NATO Secretary General Stoltenberg announced the NATO Cyberspace Operations Center in November, 2017; its role in the Alliance's operations is evolving and maturing. The Cyber Center is not aligned against any specific threat or area, but will rather serve as a focal point for NATO's common defense concept for the cyber domain. The most pressing work involves normalizing attribution of where information comes from and information sharing agreements. Although all nations endorse the concept of information sharing, most are reluctant to put their specific sources, means and methods at risk. Discussions are ongoing to address these concerns, and the Cyber Center expects to achieve initial operating capability by autumn of 2019.

37. Senator HIRONO. General Scaparrotti, what is your greatest Russia cyber concern that you hope the cyber center will work to counter (infrastructure/grid, elections, or social media servers)?

General SCAPARROTTI. NATO Allies and Partners have watched Russia aggressively exploit diverse portions of European civilian and government infrastructure to achieve both military and civilian goals. These activities cross national borders and require timely and open information sharing. The NATO Cyberspace Operations Center is intended to facilitate the sharing of cyberspace information, including indications and warnings, of future and on-going cyber actions between Allies and Partners. Sharing information will facilitate both denying Russian access to critical civilian and military systems and aid in restoral following an attack or successful intru-

sion. Through information sharing, the NATO Cyber Center will serve as a focal point for a collective cyber defense effort among Allies and Partners.

ENERGY RESILIENCE—DEPENDENCY ON RUSSIAN NATURAL GAS

38. Senator HIRONO. General Scaparrotti, the Congressional Research Service reported that Russia is Europe's main energy supplier, and that 40 percent of the European Union's natural gas is supplied by Russia. A large portion of that natural gas flows through the Ukraine, as tensions remain. Complicating matters, Russian companies and their subsidiaries have significant ownership stakes in European energy infrastructure, including pipelines, distribution, and storage facilities.

Most recently, Russia's state-owned gas company Gazprom announced it will cut ties with Kiev-based Naftogaz. This was spurred by a Stockholm arbitration court's award to Naftogaz that resulted from a four-year legal battle. The decision by Russia's Gazprom to cut supplies could lead to gas shortages in European Union countries and in Ukraine.

General Scaparrotti, what are your thoughts on this announcement? What impact would the reduction in supplies of natural gas have on Europe, NATO, and EUCOM?

General SCAPARROTTI. This seems to be Russia's standard operating procedure. They do not get their way, so they threaten to, or actually cut energy supplies to the other party in a dispute. This is not the action of a reliable partner and supplier. A reduction in supplies of natural gas to Europe could have a broad impact, depending on the size, location, time of year, and duration of the supply disruption. Eastern European countries that are heavily reliant on Russian supplies would be hit the hardest. Loss of gas supplies could impact power generation and grid stability, industrial activities, and/or home and building heating, depending on the country in question. This could have an adverse effect on force readiness and operational capacity as NATO defense forces rely on host nation-supplied electricity and other platforms that may be supported with natural gas. Our partners may also be forced to make decisions that run contrary to the U.S. interests; the pressing need to sustain energy supplies could outweigh alliance commitments.

39. Senator HIRONO. General Scaparrotti, should we be more aggressive with sanctions to counter measures such as this one? What would you recommend?

General SCAPARROTTI. I will defer to Congress and the broader interagency process as to how to proceed with specific sanctions measures to counter Russian malign influence. What I can say is that Russia continues its efforts to undermine American international leadership and fracture the alliance. Its brazen actions must be met with a strong and coordinated Alliance response, including a strong whole-of-government focus from the United States. As I mentioned in my testimony, countering Russian actions is not a DOD only activity but needs to be a coordinated whole-of-government approach that utilizes all of the tools of our elements of power—diplomatic, information, military, and economic.

NORTH KOREAN AND RUSSIAN NUCLEAR CAPABILITIES

40. Senator HIRONO. General Scaparrotti, despite reports that North Korea is willing to sit down and negotiate denuclearization, we know that the Pyongyang is committed to developing a long-range, nuclear-armed missile that is capable of posing a direct threat to the United States, and that it continues to conduct a large number of ballistic missile tests.

We also cannot forget about Russia. The Kremlin now claims a new class of hypersonic glide vehicle under development that will allow Russia strategic missiles to penetrate our missile defense systems.

What are your thoughts on North Korea's perceived willingness to negotiate their nuclear capabilities?

General SCAPARROTTI. We concur with PACOM's statement of suspicion regarding North Korea's intent and the truthfulness of Pyongyang's words. North Korea has a long and undistinguished track record of broken promises dating back to the 1994 Agreed Framework. However, if we take Kim Jong-un at his word and assume he actually is willing to negotiate, this might signal an important shift in his perspective.

Any change in Kim Jong-un's willingness to negotiate is likely being driven by a combination of key factors: sanctions and economic pressure, diplomatic isolation, military pressure, and Pyongyang's perceived strengthened negotiating position.

Although difficult to quantify, sanctions are impacting North Korea. Amid rising prices and limited availability, Kim Jong-un has been forced to issue edicts to the populace to mitigate impacts. Sanctions circumvention is also becoming more dif-

ficult, and North Korea is also grappling with the forced return of a sizeable percentage of its overseas workers, an important piece of North Korea's GDP.

North Korea has no friends, and even its few "business associates" have largely turned their back. North Korean relations have deteriorated across the board over the past year. Despite this, Kim Jong-un may think recent missile and nuclear tests put him in a fundamentally better negotiating position.

Although Kim Jong-un is likely overconfident in the Korean People's Army, he probably understands that fighting the United States would not end well for him, and North Korea is sensitive to the United States military presence on the peninsula. In exchange for steps towards denuclearization, Kim may seek concessions from the United States such as removal of forces from the Korean peninsula or promises to never use nuclear weapons against North Korea. This would be consistent with 2016 regime statements and with Kim's likely desire to ensure regime survival and safety for North Korea.

41. Senator HIRONO. General Scaparrotti, can you shed some light on the current capabilities of Russia? How concerned should we be of Putin's recent claims?

General SCAPARROTTI. Russia is developing an intercontinental-range hypersonic glide vehicle intended to defeat ballistic missile defenses. In reference to the President Putin's claim that you raised, Putin stated Russia's newest strategic weapon system, "Avangard," differs from exisiting systems because its payload can perform intercontinental flights in dense atmospheric layers at a hypersonic speed exceeding Mach 20. He said the system performs wide-range horizontal and vertical maneuvers to defeat missile defense systems. Russian military and civilian leadership continue to claim that Russia is producing a variety of systems to defeat United States missile defenses.

RUSSIA AND CHINA FORCE MODERNIZATION EFFORTS

42. Senator HIRONO. General Scaparrotti, in your testimony, you mention that the Russian military is improving and modernizing its capabilities, enhancing its ability to be a more agile force capable of executing operations across the entire spectrum of modern warfare. And that Moscow's strategic armament program has led to increased defense spending with an estimated investment of $285 billion in modernization from 2011 through 2020.

Can you compare and contrast the modernization of Russia with that of China?

General SCAPARROTTI. Russia and China pose an enduring threat to United States and Allied interests. There are similarities in each country's military modernization programs and in our understanding of their approaches to conflict. Both are developing precision kinetic and non-kinetic capabilities capable of achieving strategic effects in all domains—ground, air, sea, space, cyberspace, and electromagnetic. They are both developing asymmetric capabilities and strategies most likely to exploit perceived vulnerabilities in United States and United States-led military coalition capabilities, and which could be used to challenge United States force projection. Russian military modernization will support its posture to readily apply military force in response to crises—directly or indirectly—across the extent of Eurasia as well as advance its interests over the long term in Europe, the Arctic, the Middle East, Central Asia, and parts of East Asia. Both countries will continue to develop capabilities to sufficiently defend and pursue their interests at the expense of our own for the foreseeable future.

Russia and China are developing formidable space and cyberspace capabilities which will extend their reach and allow them to challenge United States dominated space-enabled warfare capability. Russia and China continue to develop nuclear or conventional cruise missiles capable of striking CONUS and United States assets across the globe. Both Russia and China are reestablishing and refining their capabilities to conduct long duration blue water operations in an expanding sphere of naval influence, and potential threats to United States and allied interests in multiple theaters.

Russia's operational experience in Syria has refined its ability to conduct testing its precision strike, indirect fires, air defense and special operations. Russia demonstrated an ability to conduct limited expeditionary operations for the first time in decades. Russia gained similar operational experience—direct and indirect—in illegal annexation of Crimea and its on-going involvement in Ukraine. Both situations will develop tactics, techniques and procedures, military training, and drive defense acquisition program priorities.

China does not have the same ability to operationally field its equipment in an active military conflict, but dominating its theater of influence. China continues to develop a comparable global strike capability. and has the ability to threaten United

States allies and interests in the Indo-Pacific region. China's continued development of military outposts with the goal of projected sovereignty in the South China Sea has strengthened China's military power projection along the coasts of its neighbors. China developed 72 new acres above and below ground in 2017 alone. In addition, the considerable amount of natural resources of these areas continues to disadvantage China's neighboring countries under the guise of historic cultural dominion.

While China maintains a stronger economic standing, the continued integration of Chinese and Russian strategic interests emboldens their developing bilateral relationship. This compounds the threat to United States and allied interests. Russia and China are developing multiple trade, development, and security agreements. Further military integration and training will probably be propelled by shared economic stimulus. Plans to develop central Asian markets will also envigorate both economies in the long term. Progressive collaboration will decrease vulnerability of either nation to western trade sanctions, eroding the ability of the west to check and limit hostile actions through civil means. China's projected military investment for 2018 is approximately $175 billion dollars, compared to $65 billion for Russia. Hydrocarbon revenues account for nearly half of Russia's budget, and its economic growth in recent years has been strained by depressed oil prices, trade restrictions, and sanctions. Conversely, China's diverse, export-based economy returned "an average of nearly 10 percent growth rates for almost four decades."

Over the long term, both countries, individually and combined, will pose challenges to U.S. military power projection in all warfighting and geographic domains.

43. Senator HIRONO. General Scaparrotti, are you concerned with the pace of Russia's and China's force modernization efforts? What should be the United States response to their efforts?

General SCAPARROTTI. We are concerned that Russia and China pose an enduring threat to United States and Allied interests. There are similarities in each country's military modernization programs and in our understanding of their approaches to conflict. Both are developing precision kinetic and non-kinetic capabilities capable of achieving strategic effects in all domains—ground, air, sea, space, cyberspace, and electromagnetic. They are both developing asymmetric capabilities and strategies most likely to exploit perceived vulnerabilities in United States and United States-led military coalition capabilities, and which could be used to challenge United States force projection. Russian military modernization will support its posture to readily apply military force in response to crises—directly or indirectly—across the extent of Eurasia as well as advance its interests over the long term in Europe, the Arctic, the Middle East, Central Asia, and parts of East Asia. Both countries will continue to develop capabilities to sufficiently defend and pursue their interests at the expense of our own for the foreseeable future.

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Over the long term, both countries, individually and combined, will pose challenges to U.S. military power projection in all warfighting and geographic domains. The United States needs to be prepared to respond to and counter the modernization efforts of both Russia and China, but we should also pursue innovative strategies to maintain our advantage.

QUESTIONS SUBMITTED BY SENATOR GARY PETERS

NATO STRATEGIC COMMUNICATIONS

44. Senator PETERS. General Scaparrotti, the Fiscal Year 2018 National Defense Authorization Act included Senate report language that "urges the Secretary of Defense to assign appropriate personnel to the NATO Strategic Communications Center of Excellence." Have any United States personnel been assigned to the Center?

General SCAPARROTTI. USEUCOM submitted the required documentation to the Office of the Secretary of Defense for Policy in February 2018, to include a legal and fiscal review of the Center. Once OSD approves these documents and State Department agrees, I can assign an officer to the Center. In order to comply with 10 USC 344 pertaining to NATO Centers of Excellence, this process typically takes 18–24 months.

45. Senator PETERS. General Scaparrotti, please provide an overview of NATO and EUCOM strategic communications operations, including the number of personnel assigned to strategic communications positions and how EUCOM and NATO organizations interact.

General SCAPARROTTI. The United States currently has 24 military officers assigned to NATO in Information Operations (IO), Strategic Communications, or Strategic Analysis/Plans positions. The NATO Center of Excellence for Strategic Communications (StratCom COE) is dedicated to improving strategic communication capabilities within NATO and with its Allied Nations. In February, 2018, USEUCOM identified a military billet and submitted a request to the Joint Staff seeking permission to join the NATO StratCom COE.

USEUCOM has no organizations or positions that are specifically designated for Strategic Communications. We do have one position for a Strategic Communicator Process Manager. That position is currently vacant but the hiring process is underway. We have one military and three civilian information operations planners and our Public Affairs directorate has five military and nine civilian employees.

USEUCOM Public Affairs routinely coordinates and communicates with NATO Public Affairs on public affairs guidance and strategic messaging and our NATO Branch communicates with NATO staff members daily. We participate in the NATO Assessments Working Group run by NATO's Public Diplomacy Division to obtain an understanding of the various messaging approaches and outputs of Allies.

APPENDIX A



Strategic Warning on NATO's Eastern Flank

Pitfalls, Prospects, and Limits

Mark R. Cozad

For more information on this publication, visit www.rand.org/t/RR2080

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Preface

Since 2008, Russia's military has embarked on an extensive modernization program designed to overcome shortfalls in readiness, competence, sustainability, and deployability that impeded its operations in Chechnya and Georgia. Subsequent changes in logistics and operational capability have presented the intelligence community (IC) and decisionmakers with new challenges in warning about and responding to potential Russian aggression. Russian operations in Ukraine and Syria have demonstrated improved operational concepts and capabilities, including denial and deception activities and unconventional warfare designed to operate below U.S. and North Atlantic Treaty Organization (NATO) response thresholds; they are also intended to condition allied responses to new operational patterns and deployments. If successful, these activities could inhibit the IC's ability to assess Russia's intentions and courses of action within the timelines necessary for policymakers and military commanders to formulate effective responses.

Russia has been a relatively low priority for the IC since the end of the Cold War, as new security concerns and recent wars have dominated decisionmakers' attention, and the resources dedicated by both the IC and the military to warning of Russia's activities have diminished. However, warning in the Baltics became a major concern for both NATO and U.S. Air Force Europe in 2014, because of Russia's military operations and its continuing modernization efforts. This report assesses key elements of six Soviet and Russian actions to provide recommendations for improving warning of Russian military activities along NATO's eastern flank. It also considers the practical limits for what warning improvements can realistically provide and the implications these limitations have for U.S. and NATO decision timelines, force posture, and deterrence. The report should be of interest to military planners, foreign-policy experts concerned with European security, policymakers, intelligence professionals, and anyone interested in Russian and European security issues.

This research was conducted within the Strategy and Doctrine Program of RAND Project AIR FORCE as part of a fiscal year 2015 study, U.S. Airpower and Moscow's Emerging Strategy in the Near Abroad, sponsored by Headquarters United States Air Force in Europe, Directorate of Plans, Programs, and Analyses. Other unpublished RAND reports produced by this project are

- Bryan Frederick et al., "Assessing Russian Reactions to NATO Posture Enhancements," September 2016
- James Chow et al., "Assessing Options for Enhancing Airpower's Effectiveness in Defense of NATO's Eastern Flank," September 2016.

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Summary

The relative priority of Russia as a national security concern has fallen substantially since the end of the Cold War. Accordingly, the Intelligence Community's (IC's) efforts to monitor Russia have declined, and more of its resources have been devoted to other concerns, such as Afghanistan, Iraq, global terrorism, China, and the Middle East. However, since 2008, Russia's military has embarked on an extensive modernization program designed to overcome the shortfalls in readiness, competence, sustainability, and deployability that impeded its operations in Chechnya and Georgia. Subsequent changes in logistics and operational capability have presented the IC and decisionmakers with new challenges in warning about and responding to potential Russian aggression. Russian operations in Georgia, Ukraine, and Syria have demonstrated improved operational concepts and capabilities, including denial and deception activities and unconventional warfare designed to operate below U.S. and North Atlantic Treaty Organization (NATO) response thresholds; they are also intended to condition allied responses to new operational patterns and deployments. If successful, these activities could inhibit the IC's ability to assess Russia's intentions and courses of action within the timelines necessary to formulate effective responses.

Providing warning of potential aggression by hostile nations has proven difficult for a variety of reasons, regardless of country or region. The difficulty of gaining insight into leadership intentions is a primary factor in this challenge. The limits to warning capabilities are magnified further by analyst and decisionmaker biases and a warning system that does not function consistently and may even present multiple assessments of the same situation from different organizations. In the end, warning is more art than science. Even when the warning system's elements work together effectively, it may be difficult to determine success or failure. A late or delayed decision from adversary leaders may confound warning and leave little time for U.S. and allied decisionmakers to respond. Moreover, a timely warning and response may change an enemy's behavior in ways that are not apparent to either the IC or decisionmakers, thus raising the prospect of the "cry wolf" syndrome or an alarmist IC.

Some decisionmakers, particularly within the Department of Defense, have raised concerns about the IC's ability to warn of future Russian activities in light of Russia's modernization and operations. Its reemergence as a national security priority stems from the potential for aggression on NATO's eastern flank and the corresponding threat posed to multiple NATO allies. In light of recent Russian operations and the uncertainty that accompanied them, U.S. decisionmakers are examining avenues for improving the IC's ability to provide timely warning of Russian aggression and coercion.[1]

[1] Sydney J. Freedberg, Jr., "Europe Needs Intel, Ships, & Focus: Gen. Breedlove," *Breaking Defense*, October 30, 2015; Jim Garamore, "Work Discusses Russia with Military, Intelligence Leaders," *DoD News, Defense Media*

Understanding Soviet and Russian leadership is a core challenge that complicates warning of potential Russian actions. This problem endures and compounds U.S. warning challenges because of Russia's geographic proximity to many of the areas where its forces have been committed or may be committed in the future. Other factors, such as denial and deception efforts and attempts to decrease U.S. and NATO sensitivity by routinizing military deployments and preparations, reduce the diagnostic value of indicators necessary for warning. These activities are designed to work together to impede or delay effective warning. With other high-priority issues competing for decisionmakers' attention and intelligence resources, the problem of potential Russian aggression against the Baltics is arguably the most challenging warning dilemma facing the IC and decisionmakers today.

This study examines six Soviet and Russian events that have occurred in the past 50 years that highlight some of these problems as they pertain to current concerns about aggression on NATO's eastern flank: (1) the Cuban missile crisis, (2) the Soviet invasion of Czechoslovakia, (3) the Soviet invasion of Afghanistan, (4) the Russian invasion of Georgia, (5) Russia's invasion of Crimea and operations in eastern Ukraine, and (6) Russia's deployment to Syria. Although some of these events, particularly Russia's invasion of Georgia and the three events that preceded it, have been characterized as warning failures, policymakers and the IC do not agree on the extent of the failures or their primary causes. Some senior government leaders have labeled the two most recent events—Russia's invasion of Crimea and its deployment to Syria—as failures, but others, including members of the White House staff and the Director of National Intelligence, did not see them as such.

This study does not provide a scorecard. It does not attempt to judge whether the IC warned successfully or failed in warning of the events considered. Nor does it attach blame to either policymakers or the IC. All too often, warning is treated as a binary issue and categorized as either a success or a failure. Many studies of warning assign blame to either the IC for missing key events and decisions or to policymakers for not acting upon an IC warning. The warning events highlighted in this study demonstrate that these clear-cut distinctions are often difficult, if not impossible, to make, and disagreements among an event's key participants often remain unresolved.

This report provides an overview of relevant factors in the selected warning events. It seeks to identify continuity in Russian operational practices and long-standing IC challenges that can be used to inform current efforts to improve warning. The report also addresses the many developments that have shaped warning since the fall of the Soviet Union and the beginning of Russia's military modernization efforts. These changes include major shifts in Russia's priority

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Activity, April 17, 2015; Greg Miller, "As Russia Reasserts Itself, U.S. Intelligence Agencies Focus Anew on the Kremlin," *Washington Post*, September 1, 2016; Adam Entous, Julian E. Barnes, and Siobhan Gorman, "Without Warning: U.S. Scurries to Shore Up Spying on Russia," *Wall Street Journal*, March 24, 2014; Eli Dickey, Noah Lake, and Christopher Shachtman, "Ex-CIA Chief: Why We Keep Getting Putin Wrong," *Daily Beast*, March 2, 2014; Shane Harris, "Washington's Civil War over Russia Intel," *Daily Beast*, October 12, 2015; "Exclusive: Congress Probing U.S. Spy Agencies' Possible Lapses on Russia," Reuters, October 8, 2015.

for U.S. policymakers and the IC effort devoted to both warning in general and the Russian situation. This study identifies several themes concerning continuities and discontinuities and distills the findings into recommendations for improving Russia-related warning, primarily as it applies to NATO's eastern flank.

There is an extensive body of literature detailing the events examined in this study from a variety of perspectives, which have been used here to distill several themes. These themes identify areas where the IC has had success and areas where it has been challenged, including (1) Soviet/Russian conditioning of expectations through the use of exercises, (2) Soviet/Russian denial and deception, (3) the U.S. ability to monitor critical information and indicators, (4) U.S. inability to gain access to and misreading of Soviet/Russian intent, and (5) Soviet/Russian use of indirect action.

Russia's ability to condition expectations and implement denial and deception measures played a role in limiting decisionmakers' and the IC's understanding of leadership intent in each event. Furthermore, in several events, significant information and corresponding indicators were available, but Soviet and Russian intentions were unclear or misread. Indirect action—a strategy that attempts to neutralize enemy actions through the use of nonmilitary or unconventional warfare methods, including information warfare—was present in four of the six events, but it consistently has not provided diagnostic indicators that led to advanced warning of larger operations.[2] This does not mean that activities associated with indirect action will not provide diagnostic value for warning in the future. It only reflects how these activities were contextualized and understood for warning purposes in these events. In-depth research and analysis into indirect actions and their historical use may provide new insights relevant to improving warning.

Although the IC has fewer resources dedicated to Russia and the former Soviet Union than it had during the Cold War, in each of the events discussed in this report, the IC was able to monitor key activities that pointed to potential crisis. At no point was the IC surprised by a Soviet or Russian "bolt from the blue." In fact, the IC monitored force buildups, deployments, and readiness changes and was aware that Russian use of force was a possible course of action in each crisis. The key shortfall in each event was understanding Soviet and Russian leaders' intentions and identifying when those leaders finally decided to act. These two factors were generally not identified in time to permit decisionmakers to deter Soviet/Russian actions or respond immediately.

The themes identified in the warning events are not new, but they highlight the need for renewed emphasis on rebuilding expertise in this critical region, improving collection and analysis capabilities, and emphasizing key elements of analytic tradecraft that might improve warning. As Russia's relative priority within the IC evolves, the IC will face competing demands to support current intelligence and military planning. Actions necessary for warning frequently do

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[2] Keir Giles, *Russia's "New Tools" for Confronting the West: Continuity and Innovation in Moscow's Exercise of Power*, London: Chatham House, The Royal Institute of International Affairs, March 21, 2016, p. 11.

not conform to immediate needs, so if improving warning is an actual priority, decisionmakers must ensure that the IC has adequate resources to rebuild the tools necessary for meeting this objective.

The insights derived from the examples presented here should help decisionmakers and commanders set boundaries for what they realistically can expect from warning. Even in cases where intelligence reporting and analysis are well-positioned, U.S. and NATO decisionmakers will frequently be faced with significant ambiguity. Delaying decisions for additional clarification or "unambiguous" warning will limit decision space and will consume much-needed time to develop and deploy options. Many of the Soviet/Russian decisions outlined in this study occurred late in a crisis. Knowing that this may well be the case in the future, decisionmakers and commanders will need to have war-gamed and considered potential outcomes and responses prior to the onset of crises in order to improve the possibility for a timely response.

Warning can be improved in several ways, including (1) rebuilding the IC's ability to provide in-depth coverage; (2) creating, utilizing, and maintaining improved warning indicators that cover both military and nonmilitary activities; (3) developing focused training for IC collectors and analysts, particularly in warning tradecraft and adversary denial and deception practices; (4) building and leveraging experience and expertise within and outside of the IC; (5) increasing research into how Russia transitions its military, economy, and population from peace to war.

Improvement will not be a short-term endeavor. Any success that emerges from implementing these recommendations will require time and vision. In scenarios like the situation in the Baltics, the gains derived from improved warning likely will not be enough to enable immediate responses to Russian operations. This highlights a core element of the warning dilemma: In the absence of in-depth analysis, experience, and adequate resources, warning failure is a high-probability outcome, if not a near certainty. Even with significant resources, deep understanding of the target, and a well-developed system, warning is often contingent upon access to information on adversary intent, which generally is opaque and often changes as leaders reevaluate the overall situation and the courses of action available to them. Thus, while improvements in analysis and collection will guard against outright failure, they will not guarantee success.

Warning is not solely an intelligence function. Policymakers can contribute to improving the warning process in several ways, including (1) communicating more-clearly-defined priorities, (2) setting and maintaining realistic expectations for what warning can provide in the policy process, and (3) considering and developing realistic options prior to actual crises. Warning is essential for both providing the time necessary to make decisions and the quality of the decisions ultimately made. Less time and poor information are likely to have direct, negative effects on crisis decisionmaking.

Effective warning requires active engagement by all the decisionmakers involved. Improved warning will do little if the will and resources necessary for an appropriate response are not present. In some of the events studied here, e.g., the Soviet invasion of Czechoslovakia, even if

policymakers had received what they would categorize as adequate warning, it is unclear what practical options were available. Today, this is true regarding NATO's eastern flank. Without an increase in the overall force posture and readiness to respond in the event of Russian aggression, improved warning will have little positive overall effect. It cannot make up for a perceived lack of will or an inability to respond because of resource constraints. The time between a Russian decision and the beginning of an operation could be short—as analysis of earlier events suggests, it could be as little as two weeks or even less. As Russia continues to improve the speed with which it can mobilize and deploy its forces, these timelines are likely to become shorter. In areas where there is already an overwhelming Russian advantage, increased warning lead times will be highly unlikely, and marginal improvements in warning will offer little value to policymakers and commanders. Bolstering the U.S. and NATO posture will remain the best option for deterring future Russian aggression in the Baltics.

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The thorough reviews provided by Roger George and Rich Girven added considerably to the final report. Both reviewers were able to help clarify and strengthen several of its key arguments and conclusions. The benefit of their extensive experience in the intelligence community added greatly to the final report.

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Abbreviations

CIA	Central Intelligence Agency
COA	course of action
DCI	Director of Central Intelligence
DCID	Director of Central Intelligence Directive
DoD	Department of Defense
IC	Intelligence Community
ICD	Intelligence Community Directive
NATO	North Atlantic Treaty Organization
NIE	National Intelligence Estimate
NIO-W	National Intelligence Officer for Warning
RFAF	Russian Federation Armed Forces
SNIE	Special National Intelligence Estimate

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1. Introduction: The Warning Dilemma

Since the Intelligence Community's (IC's)[1] inception, warning has been one of its highest priorities. However, the IC has had to balance multiple competing priorities to identify and monitor enduring and emerging threats to U.S. national security. Recognizing the need to prevent surprise attacks, its foremost function has been and remains alerting U.S. and allied leaders of potential dangers. Over the course of its existence, the IC has generally been successful; however, some notable failures have led senior policymakers and IC leaders to periodically reexamine, reassess, and reorient the IC's organization, resources, and priorities in light of emerging threats, changes in the security environment, and shifting policy priorities.[2] A prominent example of the IC's introspection into and reform of its warning structure resulted from its failure to warn of Iraq's 1991 invasion of Kuwait.[3] Immediately following that invasion, the Director of Central Intelligence (DCI) established a task force to examine the IC's organization and practices for providing warning. The task force also provided recommendations on how warning should be performed in the future to meet policymakers' needs in an international environment that would be vastly different from the Cold War alignment that had long defined U.S. policy and intelligence focus.[4]

As priorities and requirements have changed over time, the IC has reoriented its limited resources to focus on what policymakers have identified as their most pressing needs. These

[1] The IC comprises all analysts, managers, and senior leaders within the 16 U.S. government agencies that conduct intelligence activities and the military departments.

[2] There is an extensive literature on the IC's approach to warning over the years. Some of the most useful sources on how these changes shaped that approach are John F. McCreary, "Warning Cycles," *Studies in Intelligence*, Vol. 27, No. 3, Fall 1983, p. 71; Mary O. McCarthy, "The National Warning System: Striving for an Elusive Goal," *Defense Intelligence Journal*, Vol. 3, 1994, pp. 5–19; Charles E. Allen, "Warning and Iraq's Invasion of Kuwait: A Retrospective Look," *Defense Intelligence Journal*, Vol. 7, No. 2, 1998, pp. 33–44; Cynthia Grabo, "The Watch Committee and the National Indications Center: The Evolution of U.S. Strategic Warning 1950–1975," *International Journal of Intelligence and Counterintelligence*, Vol. 3, No. 3, 1989, pp. 363–385. While this list is by no means exhaustive, it provides a starting point for examining the literature produced by notable members of the IC's warning community.

[3] See DCI, *DCI Task Force Report: Improving Intelligence Warning*, May 29, 1992, approved for public release April 25, 2012, p. 2. This report noted that "except for the priority requirement of a military attack on the U.S. or its allies by the former Soviet Union, the National Intelligence Community has never seriously attempted to establish dedicated analytical programs for intelligence warning on a global scale." The report identified continued difficulties with the IC's organization despite previous efforts outlining organizational responsibilities (p. 4), and it contended that for warning, "no such 'system' currently exists and the National Warning System is more of an illusion than a reality."

[4] See DCI, 1992, p. 4.

shifts have at times entailed accepting increased risk in order to balance resources among competing demands.

The reform efforts highlight the dilemma that faces policymakers and IC leaders: In the absence of in-depth analysis, experience, and adequate resources, the probability of warning failure increases. As policymaker priorities adapt to new threats and concerns, the IC must ensure that it meets decisionmakers'[5] dynamic needs. The DCI task-force report and subsequent studies of warning have demonstrated that this requires the IC to shift its collection and analysis resources to areas that may have received limited attention in the past.[6] As priorities among intelligence targets change, collection requirements and capabilities change and analysts are asked to reorient their efforts. This dynamic landscape requires adaptable people and capabilities, conceivably at the expense of tailored collection efforts and regional expertise. Reconstituting these capabilities can be difficult and costly, and it is unlikely to be accomplished quickly.

Timely warning is often contingent upon access to information on opaque adversary intent that can change as foreign leaders reevaluate the overall situation and the courses of action (COAs) available to them. Building or rebuilding the capabilities necessary to provide timely warning generally requires a mix of additional resources, collection capabilities, and analytic expertise. These are not acquired quickly or without cost. The dilemma is that while the improvements will decrease the likelihood of outright failure, they will not guarantee success. The problem relates not only to cost-benefit factors of investing in improved warning capability, but also to the core issue of how decisionmakers and the IC define success and failure. In situations where early warning is received and decisionmakers have time to react, an adversary may modify its behavior and decide against taking immediate action. In such cases, a warning success may never be known—the situation may appear to be one where the IC "cried wolf."[7] Repeated warnings over time may also desensitize decisionmakers who believe that the adversary has not taken action. And while decisionmakers seek "early" warning, an adversary's leaders may not make a final decision until relatively late in a crisis, thus limiting the ability to respond even if the IC is able to warn at the time of the adversary's decision. Potentially costly and time-intensive efforts to build warning capabilities still may not be able to provide warning in enough time for decisionmakers to act.

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[5] In this report, decisionmakers include senior officials in policy roles across the government, commanders, and military planners.

[6] Mary O. McCarthy, "The Mission to Warn: Disaster Looms," *Defense Intelligence Journal*, Vol. 7, No. 2, 1998; McCarthy, 1994, pp. 5–19; Science Applications International Corporation, *Warning in Uncertainty—Rethinking Warning in a Changing World*, conference summary, Herndon, Va., February 1, 2000; John A. Kringen, "Rethinking the Concept of Global Coverage in the U.S. Intelligence Community," *Studies in Intelligence*, Vol. 59, No. 3, September 2015.

[7] McCreary, 1983, p. 75.

Warning About the Soviet Union and Russia: Then and Now

One of the DCI task force's major findings was that the IC needs to focus on concerns that go beyond major conventional conflict and political instability in key states.[8] In response to policymakers' needs to address a host of new problems, including ethnic unrest, counternarcotics, and genocide, the IC shifted a significant part of its focus to identifying potential regional dynamics that might involve or threaten U.S. resources and personnel (e.g., in Somalia, Bosnia, West Africa, and Iraq). Concurrently, many of the capabilities directed toward the former Soviet Union were reoriented to other intelligence problems. Over time, the IC was given far fewer resources with which to monitor developments in Russia.

The warning evolution that occurred after the end of the Cold War underpins several major themes in this study. First, the expertise and understanding of Soviet military planning and the capabilities necessary for producing assessments required extensive time and resources to develop. These capabilities did not materialize on short notice, and the number and experience level of analysts dedicated to this central problem had grown significantly over time. The IC was able, over the course of long analysis, to obtain a deep level of understanding facilitated by extensive collection resources and guided by the wide-ranging expertise of analysts dedicated to the core warning problem of the day.[9]

The second theme involves the level of attention U.S. political and military leaders devoted to Russian activities as a matter of course during the Cold War. An extensive portion of the U.S. policy community and much of the military were focused on missions that in some way or another involved countering or deterring the Soviet Union or its allies. Thus, those responsible for responding to crises understood the problem and were supported by a force posture that provided significant response options.

A third theme is that regardless of how much expertise and attention was devoted to the problems of Cold War warning, the IC and policy communities had only limited understanding of Soviet intentions. This limitation became evident during several crises, including the Cuban missile crisis, the Soviet invasion of Czechoslovakia, and the Soviet invasion of Afghanistan. The same lack of understanding has figured prominently in more-recent Russian actions in Georgia, Ukraine, and Syria. Its relevance remains and must be taken into account as the IC explores the steps it can take today to improve its warning capabilities against Russia.

In spite of the critical lack of understanding of Soviet leaders' intentions, the United States had well-developed indicator lists and significant amounts of quality intelligence on Soviet force posture that indicated when there was a potential for hostilities. The IC closely monitored and

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[8] The report termed these traditional focus areas as "big W" types of warning problems.

[9] For an excellent example of the level of analysis dedicated to Russia's actions at an early date, see Thomas J. Patton, "The Monitoring of War Indicators," *Studies in Intelligence*, Vol. 3, Winter 1959, declassified September 18, 1995, p. 57 (part of Record Group 263 in "Records of the Central Intelligence Agency, 1894–2002," National Archives at College Park, Md.). Later examples include DCI, *Warning of War in Europe: Changing Warsaw Pact Planning and Forces*, Memorandum to Holders, NIE 4-1-84, September 1989.

reported on events in great detail as they progressed, and it placed even greater focus on events once they began to unfold. In none of the major crises was the community caught completely off guard. However, there was only limited direct intelligence on Soviet or Russian leadership intentions,[10] and in several cases, intelligence analysts and policymakers did not agree on whether appropriate warning had been delivered.[11] In other situations, policymakers delayed making decisions until they felt they had a sufficient level of certainty. The examples in this study demonstrate that effective warning is not merely the sum of a series of well-defined parts. Effective warning also generally cannot alleviate shortfalls in force posture and realistic policy options. If forces and planning are not in place and aligned to respond effectively, warning becomes an informational exercise. Warning should, therefore, always be thought of in the context of time requirements as time relates to leadership decisions, whether those decisions are being made by our adversaries or by our own leaders.

Background

Russian military operations since 2008 and more-recent "no-notice" military exercises that the Russian Federation Armed Forces (RFAF) reinstituted in 2013 have raised concerns among senior U.S. and North Atlantic Treaty Organization (NATO) leaders that the IC's ability to warn of Russian aggression has atrophied. This perceived shortcoming is seen as presenting significant risk to alliance leaders charged with protecting NATO's eastern flank from future Russian military actions. Questions about the IC's warnings of Russian military operations in Georgia, Crimea, eastern Ukraine, and Syria all contribute to an overarching concern among senior U.S. commanders that the IC's ability to warn of future Russian actions is seriously challenged.[12] In view of Russia's significant efforts to address operational shortcomings highlighted in earlier events and an increasingly provocative and aggressive posture toward U.S. and NATO forces in the region, these concerns call into question NATO's ability to deter or respond in a timely fashion to Russian aggression. Russian leaders seem to possess a highly centralized decisionmaking process that enables them to operate within the U.S. and NATO decision cycle. Furthermore, Russia's physical proximity to potential conflict zones and the increased size and

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[10] For a recent example, see Eli Dickey, Noah Lake, and Christopher Shachtman, "Ex-CIA Chief: Why We Keep Getting Putin Wrong," *Daily Beast*, March 2, 2014. For historical examples, see Central Intelligence Agency (CIA), *Strategic Warning & the Role of Intelligence: Lessons Learned from the 1968 Soviet Invasion of Czechoslovakia*, Center for the Study of Intelligence, 2010; Donald P. Steury, ed., *Sherman Kent and the Board of National Estimates: Collected Essays*, Washington, D.C.: CIA, Center for the Study of Intelligence, 1994, pp. 175–188.

[11] This study does not attempt to adjudicate these disagreements. Several press articles, interviews, and scholarly studies (including some by the IC) acknowledge disagreements about the effectiveness of warning in Czechoslovakia, Afghanistan, Georgia, and Ukraine.

[12] These concerns are discussed in Aaron Mehta, "Gen. Breedlove: Intelligence Community Changing How It Handles Russia," *Defense News*, October 30, 2015; "Congress Probing U.S. Spy Agencies' Possible Lapses on Russia," *World News*, October 7, 2015.

improved readiness of its military provide it with many options that can be executed relatively quickly.[13]

This report assesses the challenges facing the IC and decisionmakers, particularly in providing advance notice of a major Russian military operation on NATO's eastern flank. It also presents recommendations for improving shortfalls in existing capabilities. These recommendations are based on analysis of previous IC warning efforts that have had demonstrated success, particularly in cases where a target nation attempted to condition U.S. or allied responses or conduct denial and deception activities. The recommendations also urge senior policymakers and intelligence leaders to consider potential warning-posture tradeoffs and the extent to which early warning is an actual priority, as opposed to merely a stated priority.[14]

Warning is not solely an intelligence function—it requires active engagement on the part of policymakers and military commanders. Richard Betts, in a study on surprise attacks and their implications for military posture and planning, stated, "The common view is that surprise occurs because intelligence services fail to warn."[15] However, in many situations, "leaders in the victim state were warned that the enemy was marshalling the capabilities to strike but they did not react to the warning in ways that hindsight demonstrates were necessary." The tendency, he argued, is to place the emphasis on warning and detection rather than response. In circumstances where warning needs improvement, reliance on it might create a sense of overconfidence that carries with it severe risks and potential consequences. The present study also addresses the limits of warning and the expectations that are reasonable when considering options to improve it.

Policymakers and military leaders who are the recipients of warning must ask the broader question: What constitutes successful warning? Each of the warning events involving the Soviet Union or Russia examined in this report raises questions about whether better policy responses could have been crafted if policymakers were given additional time. Was there sufficient time to craft a response or to gain acceptance among all the necessary alliance members or interested parties? Were the necessary forces and resources in locations that would enable a timely response? As these questions suggest, detection is only the initial point in this process. Warning and response are, by necessity, inextricably tied.

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[13] These short timelines are highlighted in David A. Shlapak and Michael W. Johnson, *Reinforcing Deterrence on NATO's Eastern Flank: Wargaming the Defense of the Baltics*, Santa Monica, Calif.: RAND Corporation, RR-1253-A, 2016.

[14] A stated goal is a desired endpoint toward which a specific system is oriented. However, the system may not have the requisite structure and resources to actually attain that goal. In this report, an actual goal of warning is to ensure that resources and structure are oriented to those tasks that are deemed most significant for improving warning on a regular basis. The distinction between stated and actual priorities is important when weighing the demand for current intelligence against intelligence resources devoted to in-depth research. See Russell Ackoff, "Towards a System of System Concepts," *Management Science*, Vol. 17, No. 11, July 1971, pp. 661–671; C. Argyris, *Knowledge for Action: A Guide to Overcoming Barriers to Operational Change*, San Francisco: Jossey-Bass, 1993.

[15] Richard K. Betts, *Surprise Attack: Lessons for Defense Planning*, Washington, D.C.: Brookings Institution Press, 1982, p. 16.

Approach of This Study

This report relies heavily on historical sources and current press reporting for identifying and examining prominent themes in the context of current U.S. and NATO warning capabilities. Its conclusions are derived from several sources, including declassified intelligence assessments, historical studies of strategic warning and surprise, recent press reporting, war games that examine potential Russian COAs on NATO's eastern flank, and recent studies on Russia's military modernization. Warning is examined not only as a methodological and functional process, but also as a cognitive process in which decisionmakers receiving warning and the analysts providing it frame their analyses and decisions based on analogies, perceptions, and conceptual models. By identifying and understanding how these factors influenced previous events, we can determine the relative and practical limits of innovative strategies for enhancing warning.

The warning events examined in this study are not judged as successes or failures. Members of the IC and the decisionmakers with whom they serve are often at odds over the details of events: What information was available? When were key pieces of analysis prepared? When were they presented? Who received them and did they clearly warn? Adjudicating which view is correct is a historical endeavor heavily shaped by the perceptions of the actors involved. A simple examination of the record is unlikely to tell the entire story, and relying on the experiences and memory of key players can at times be problematic. Likewise, simply deferring to decisionmaker prerogatives may gloss over problems in the U.S. ability to respond and the constraints that led to those problems. One former senior IC official argued that the IC had done an adequate job of warning in the case of Russia's invasion of Georgia; however, a senior policy customer did not have the same view.[16]

The outputs from the warning process must be understood within the broader context of warning as it has evolved following the end of the Cold War. Since 2010, the IC has undergone several organizational changes in the way it addresses warning, in particular, the disestablishment of the National Intelligence Officer for Warning (NIO-W) position and the National Intelligence Managers' assumption of warning responsibilities in their respective regional or functional areas.[17] This report does not discuss recent organizational developments in the U.S. warning system; however, it explores elements of the system to determine whether historical shortcomings were episodic or an inherent part of the warning business.[18] Generally, we consider how warning is delivered at an institutional level, with relatively limited insight into

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[16] Interview with a former senior IC official.

[17] The NIO-W position was instituted by DCI Directive in 1979 (DCI, Directive No. 1/5, *National Intelligence Warning*, May 23, 1979 [document superseded DCID No. 1/5, effective May 18, 1976]). This directive laid out the organizational construct for the National Intelligence Warning System and defined the NIO-W's responsibilities.

[18] Additional details on how warning is managed within the IC are given in Mark Cozad, "Strategic Warning: Organizing and Managing the Mission for the Current Era," Santa Monica, Calif.: RAND Corporation, unpublished.

the analytic processes that lead to outcomes.[19] Because only limited information is available on how analysts made assessments and the factors that shaped their perspectives, we relied on the analytic products, with limited understanding of the specific perceptions and editorial judgments that shaped these products. However, understanding how the broader intelligence and warning processes shape analyst and policymaker approaches to warning-related issues would help to identify ways to improve U.S. warning capabilities.

Finally, the study examines the Soviet/Russian events in the context of the warning-response dynamic that Betts and other authors have highlighted.[20] Renewed efforts to improve warning of Russian aggression should take advantage of the knowledge gained from earlier events. This study highlights several contextual differences in these events that should shape recommendations for the future. It raises questions about what the IC is being asked to provide as warning—mere detection or something more? Recent Russian operations in Georgia and Ukraine have highlighted the speed with which Russian actions have occurred or might occur in the future. They have also demonstrated a series of complex problems associated with potential U.S. and NATO responses, including current force posture, logistics, and alliance participation.[21] Reflecting the information provided in this body of work, this study provides a realistic baseline regarding what policymakers and military commanders should expect from the IC in terms of warning.

Organization of the Report

Chapter 2 addresses past approaches of policymakers and planners to warning and how the IC structures warning problems. As the IC rebuilds its capacity for providing analysis on major conventional threats and great-power competitors, it will be necessary to identify the strengths and weaknesses of traditional approaches and methodologies, rather than simply applying historical examples to future events without considering the ways an adversary like Russia is evolving. It is also necessary to understand where the historical methodologies have fallen short before any practical and workable solutions can be considered.

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[19] Analytic bias is a major factor contributing to intelligence failures. Over the years, the IC has attempted to mitigate this bias through the use of structured analytic techniques and the development of analytic standards across agencies (see Richards J. Heuer, Jr., *Psychology of Intelligence Analysis*, Washington, D.C.: CIA, Center for the Study of Intelligence, 1999; Richards J. Heuer, Jr., and Randolph H. Pherson, *Structured Analytic Techniques for Intelligence Analysis*, Washington, D.C.: CQ Press College, 2010; Director of National Intelligence, *Intelligence Community Directive 203: Analytic Standards*, January 2, 2015). These practices have been adopted widely within the IC, except in the State Department Office of Intelligence and Research. However, to date, there has been no systematic study of whether they have improved analysis (see Stephen Artner, Rich Girven, and James Bruce, *Assessing the Value of Structured Analytic Techniques in the U.S. Intelligence Community*, Santa Monica, Calif.: RAND Corporation, RR-1408-OSD, 2016).

[20] Betts, 1982; Richard K. Betts, "Surprise Despite Warning: Why Sudden Attacks Succeed," *Political Science Quarterly*, Vol. 95, No. 4, December 1980.

[21] Shlapak and Johnson, 2016.

Chapter 3 presents key warning themes from six events—three involving the Soviet Union and three involving Russia. These themes highlight similarities and contrasts in the crises. They show what the IC was able to provide, where it fell short, and key variables that contributed to failures in each case. They also highlight indirectly the different priorities and resources devoted to understanding Soviet or Russian capabilities and intent. While these examples may not at first seem to be connected, the themes demonstrate that certain problems persist regardless of the resources devoted to the target.

Chapter 4 details recommendations for improving warning on NATO's eastern flank, with a primary focus on the warning-response dynamic. It examines the extent to which warning can meet the demands being placed on it and whether improvements—even substantial ones—will be capable of providing policymakers and commanders with the time necessary to develop and implement effective COAs. It also offers several considerations for policymakers and commanders regarding priorities, expectations, and the need to have realistic options that can be executed on short notice if necessary.

Chapter 5 presents the conclusions of the study.

2. Warning Pitfalls

To evaluate current U.S. warning capabilities, it is necessary to clearly define *warning* and its associated functions. Warning is often discussed as an intelligence function, with attention placed primarily on the quality of collection and analysis, as viewed against the timeliness and accuracy of the disseminated outputs. This view fails to address the importance of decisionmaking and its resultant actions in formulating appropriate responses to warnings. The emphasis on the IC's role and the extent to which the IC satisfied or failed to meet policymakers' needs for warning in a particular event implies that timely warning is a necessary precursor to a policy response.

However, this approach does not account for the limits of what warning can provide and the corresponding difficulties that lead policymakers to delay their decisions in the hope of added clarity, certainty, or decision space. Furthermore, it fails to address the resource restrictions that affect the range of options available. Several historical examples demonstrate that strategic surprise often results from policymakers delaying their decisions or failing to respond to developments preceding an event.[1] To place warning in the broader context of U.S. and NATO force posture on NATO's eastern flank, this study focuses on the limitations of warning that policymakers and commanders should expect and what these limitations imply for responding to Russian aggression.

Warning is a process comprising two components, one involving intelligence alerts and the other involving policy decisions and responses.[2] Thus, the primary challenge should be defined as a warning-response problem, in which intelligence notification of an impending adversary action is a necessary first step but by no means an end in itself.[3]

This chapter outlines the first component of the problem—alerting and warning—by describing how the community has historically defined warning problems and the methodologies

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[1] Betts, 1982, p. 123; Ephraim Kam, *Surprise Attack: The Victim's Perspective*, Cambridge, Mass.: Harvard University Press, 1988, p. 2; Richard K. Betts, "Analysis, War, and Decision: Why Intelligence Failures Are Inevitable," *World Politics*, Vol. 31, No. 1, October 1978. Betts, in particular, highlights several instances in the post–World War II era when policy decisions were delayed because of preconceptions about enemy capabilities, desires to pursue diplomatic outcomes, deception, and other factors. One example is the Israeli Ministry of Defense's willingness to ignore the reinforcement and redeployment of Egyptian forces—a factor that invalidated the key Israeli planning assumption that the Israeli Defense Force could achieve a favorable force ratio with its own mobility prior to an Arab attack. According to Betts, information that contradicts prevailing perspectives, particularly those most central to major policies, must satisfy a significantly higher burden of proof to gain acceptance.

[2] Betts, 1980, p. 552; McCreary, 1983, p. 72.

[3] Alexander L. George and Jane E. Holl, *The Warning-Response Problem and Missed Opportunities in Preventive Diplomacy*, New York: Carnegie Commission on Preventing Deadly Conflict, Carnegie Corporation of New York, 1997.

it has employed to deal with them. This information was derived primarily through identifying and monitoring key indicators in theoretical scenarios or actual events. From a warning perspective, much of the IC's warning effort has been devoted to collecting and analyzing information related to these indicators. The chapter next examines the IC's traditional approach to warning in general and then considers the implications for policymakers and commanders concerned with warning against Russian actions in particular.

The Traditional Warning Approach

Traditional warning methodologies have focused primarily on using indicators—"known or theoretical step[s] which the adversary should or may take in preparation for hostilities"[4]—to identify significant changes in an enemy's posture that might signal specific threats. Generally, indicators reflect prevailing models or scenarios for specific actions an adversary may take prior to and at the outset of hostilities. These "working hypotheses about reality" form the cornerstone for perceiving "change and discontinuity, in contrast to continuous and 'normal' evolutionary sequences."[5] Each indicator ideally represents a discrete, identifiable action that, when considered along with other indicators, might provide analysts with a body of activities that signify a materializing threat.

The IC has traditionally assumed that timely warning relies on the need to understand both capabilities and intentions. This line of thinking holds that to develop quality indicators, analysts must have insight into the types, numbers, and characteristics of an adversary's order of battle and key weapons systems. Understanding logistics and sustainment capacity, particularly as they relate to the types of forces in a particular military, can provide analysts with an understanding of how long forces might be able to operate at particular distances. Similarly, identifying mobility and transportation capabilities can enable analysts to bound potential operating areas and develop timelines for the length of time it will take to get forces to their necessary locations. Finally, understanding an adversary's command-and-control equipment and architecture (e.g., levels of control, degrees of autonomy, and targeting capacity) can enable analysis of the types of operations the adversary is likely to pursue.

Identifying technical capabilities, deployments, and numbers is not sufficient, however, for creating the scenarios needed to develop indicators of a particular course of action (COA). Simply focusing on capabilities for any military runs the risk of reinforcing biases or making incorrect assumptions about the types of risks adversary leaders are willing to take. Additionally, a capabilities-centric outlook may ignore other pressures driving those leaders toward actions that use their military forces in unexpected ways. Therefore, warning analysis has also

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[4] Cynthia M. Grabo, *Anticipating Surprise: Analysis for Strategic Warning*, Bethesda, Md.: Center for Strategic Intelligence Research, Joint Military Intelligence College, 2002, p. 3.

[5] McCreary, 1983, p. 72.

emphasized understanding an adversary's intentions, through either direct or indirect means. Direct means include reporting about the deliberations and outcomes of adversary leadership meetings and decisionmaking processes. Such reporting on a regular, sustained basis is often beyond the IC's capabilities and access. Indeed, there is no indication that the IC had access to this type of information in any of the six events examined in this study.

Indirect reporting comes from sources such as war plans, doctrine, and exercises. Each of these sources is limited in its ability to provide insight into intentions. Understanding doctrine might provide the framework for understanding how an adversary might employ its capabilities under different conditions,[6] and insight into war plans and the planning process might provide a clear connection into how a military would prepare and deploy for military operations once leaders have decided upon putting a plan into action. However, these types of evidence do not provide any clarity on the decision to exercise or implement them. Although indirect means of understanding intentions require significant effort, they are probably more attainable than gaining access to sensitive leadership deliberations. Monitoring capabilities and intentions provides the baseline for setting the parameters of a war problem, but the effort to define warning problems faces two challenges that go beyond the capabilities and intentions framework. These challenges concern the issue of how a nation goes to war.[7] The first challenge is the extent to which IC analysts have considered the range of options available to an adversary and their understanding of that adversary's decisionmaking processes and central motivations. Understanding capabilities and intentions may allow analysts to draw conclusions about plausible scenarios, but the scenarios developed by this process may conform to the analysts' own biases. Accordingly, where possible, scenarios should be developed in light of an adversary's doctrine, war planning, and exercise activities.[8] Integrating this information requires long-term research. Doctrine typically is not static, particularly in the case of the Russian military. It adapts on the basis of perceived changes in the international security environment and developing trends in warfare. Awareness of these evolutions and the perceptions that underpin them should also be considered in the context of military exercises and planning.[9] Integrating this broad body of analysis can be challenging, particularly since analysts working on doctrine and strategy issues are often focused on long-term research and less connected with current intelligence reporting. To effectively define a warning problem and the likely scenarios that it entails, the IC must dedicate resources to such long-term research and routinely use it to inform current intelligence analysis.[10]

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[6] Grabo, 2002, pp. 17–20.

[7] Grabo, 2002, p. 53. This subject is briefly discussed in Allen, 1998, pp. 33–36.

[8] Grabo, 2002, p. 53.

[9] Grabo, 2002, p. 54.

[10] Grabo argues that analysts working on long-term issues, particularly doctrine and strategy, are not the same analysts who produce current intelligence products (Grabo, 2002, p. 54). The division between long-term and

Doctrinal materials generally present discussions of operational military issues. However, nonmilitary preparations for war must also be considered in scenario development. During the 1980s, a significant amount of work detailed preparations that nations with planned economies—including the Soviet Union, North Korea, Syria, Iraq, and India—took to prepare for war.[11] The findings demonstrated that these nations began their preparations by diverting resources from the civilian economy toward the military. These diversions required governments to manage a range of activities that cut across their nations' social, political, economic, and military life.[12] Legal guidelines, regulations, and mobilization procedures are still integral to understanding how foreign leaders contemplating military action envision the threats and contingencies for which they have to plan. Mobilization exercises and related activities may be key elements of this process, but they do not provide a comprehensive understanding of the full scope of activities or the legal, regulatory, and procedural challenges involved. These nonmilitary factors are essential for creating scenarios and developing indicators, because they represent a set of activities that can disrupt the economy and lead to internal unrest if not managed effectively. Identifying nonmilitary preparations may help bound the types of scenarios leaders consider and the types of operations they undertake, particularly when faced with an adversary capable of escalating the conflict.

The second difficulty in analyzing how a country goes to war is based on the IC's knowledge and understanding of how an adversary operates on a routine basis. As capabilities develop, routine operations likely will reflect new operational concepts and tactics designed around them. Similarly, adversaries also evaluate and reassess the international security environment, often seeking to identify new methods of warfare. Their assessments may also lead to changes in leadership intent as new opportunities or threats emerge and others recede. As a result, the routine operations of an adversary, particularly Russia, will adapt to new conditions. Identifying norms in activity requires long-term research and may involve historical analysis in areas where the IC has retained limited experience or expertise in its analytic workforce. Furthermore, routine operations must be constantly reevaluated in ways beyond current intelligence reporting. Specific warning problems and their associated scenarios should be dynamic and should incorporate new developments. In some cases, threats may remain fixed for relatively long time periods (e.g., North Korea, the Taiwan Strait, and Cold War Europe); however, competing territorial claims and the emergence—in some cases, re-emergence—of major powers creates a dynamic environment that challenges the IC's ability to define warning problems and keep them current. It is thus a challenge for the IC to continuously evaluate the norms on which to base its warning

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current intelligence is well documented and acknowledged by many in the IC. The present author's discussions with intelligence professionals in the IC and his own experience provide numerous examples of this division.

[11] Allen, 1998, p. 35.

[12] Grabo, 2002, p. 55.

scenarios and indicators to distinguish between routine activity and anomalous patterns that may portend a specific threat to national interests.

Warning intelligence also requires dynamism, which includes collecting new types of sources that go beyond traditional intelligence reporting on military activities and incorporates sources on legal, doctrinal, and procedural developments. Dynamism also entails developing a long-term research effort that enables analysts to more readily identify changes that fall outside areas they traditionally monitor and incorporate new findings into diagnostic indicators that may better reflect leadership intent and preparation for conflict.

Organizational Influences

Accurately understanding the difficulties described above is indispensable for defining the warning problems the IC faces; however, it is also essential to consider bureaucratic responsibilities and imperatives. The predominant factors driving the efforts of IC agencies to identify and monitor warning problems are the way departmental responsibilities are set and how priorities in support of national security objectives are established. Although all of the agencies in the IC work from the same framework of national intelligence priorities, their responsibilities often differ according to their mission areas. Historically, the IC has monitored global warning problems over the full range of regional and topical issues, but after the Cold War ended, the DCI's Task Force on Intelligence Warning noted that the IC placed an overwhelming emphasis on what was termed "big W" warning problems—major military conflict and political stability.[13] Although the IC has made adjustments in its coverage of other issues since the task force report was issued, the Department of Defense (DoD) remains concerned primarily with warning of large-scale military operations and political instability based on its planning guidance and key mission areas.[14] Although analysts within DoD monitor a wide range of enduring and emerging regional issues, the department's emphasis is centered on warning intelligence to support its highest-priority planning and crisis-response requirements. Until recently, intelligence on Russia and the former Soviet Union has had relatively low priority. As a result, the IC and DoD have devoted less analytic capacity over the past 20 years to defining Russia-related warning problems.

The final critical element in the IC's warning function has been the manner in which warning is "delivered" to policymakers and commanders. This typically has been a function of organizational and temporal factors. Because of the fluid situations that analysts monitor and report on, warning frequently occurs over a long period of time and through a wide range of IC and departmental intelligence reports. In the events examined in this report, warning

[13] DCI, 1992, p. 4.

[14] Chairman, Joint Chiefs of Staff, *Joint Intelligence*, Joint Publication 2-0, Washington, D.C., October 22, 2013, p. I-18. This publication states that "'emerging warning concerns' and 'enduring warning problems' discuss issues relevant to national security warranting DOD leadership attention." Enduring warning problems are "usually linked to contingency plans, which are defined and longstanding potential threats to US interests."

developments were reported through the *President's Daily Brief*, National Intelligence Estimates (NIEs), interagency intelligence Alert Memoranda, and Special National Intelligence Estimates (SNIEs). Individual agencies also have their own dedicated products, including the Central Intelligence Agency's (CIA's) *National Intelligence Daily* (now the *Worldwide Intelligence Review*), the Defense Intelligence Agency's *Defense Intelligence Notes*, the Chairman of the Joint Chiefs of Staff daily update briefing, and theater-specific products produced by combatant commands and the regional service components.[15] At times, these reports agree, but frequently they do not. This range of intelligence reporting mechanisms and disagreement within the community has at times led to confusion among policymakers. As an example, prior to Iraq's invasion of Kuwait, the NIO-W and his staff provided assessments that strongly disagreed with the IC's overall assessment that Iraq would not invade Kuwait.[16] In that case, competing analysis and products left policymakers to draw their own conclusions.

The type of warning delivered is also tied to the temporal aspects of any given threat and is thought of in terms of *strategic* or *tactical* warning.[17] Although these terms have been defined in earlier iterations of Director of Central Intelligence Directives (DCIDs), they have not provided a significant degree of clarity for analysts or policymakers.[18] Specifically, DCIDs on warning defined *strategic warning* as warning of war and *tactical warning* as warning of attack; however, no good definitions have been provided that allow analysts and policymakers to clearly define and understand what these concepts imply.[19] That said, the IC's role in the warning process is centered on strategic warning, with tactical warning identified as a military operational matter.[20] Strategic warning—a term originally tied to an adversary's *decision* to go to war and its subsequent *strategic preparations* to support the selected COA—is now often understood to refer to temporal conditions (i.e., early warning or notification early in a crisis), rather than to an adversary's actions. This has led many policymakers and IC managers to associate effective response with receiving warning early in the development of a crisis.[21] Clearly, early warning is generally more desirable than late warning; however, as historical examples demonstrate, adversary decisionmakers often do not make their decisions until relatively late in a crisis.

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[15] These products are both historical and current. There have been recent changes in specific product names, but the point of this list is that multiple products from several producers offer warning-related intelligence updates.

[16] See Allen, 1998, pp. 36–38, for an excellent example of a case in which key IC elements did not agree in their assessments and reporting.

[17] Interviews conducted for recent RAND studies on warning also highlighted cases in which some DoD analysts referred to "operational" warning. This report does not address this category because it is not defined or explained in historical or current IC or DoD policy, directives, or doctrine. The interviews highlight the fact that the term is generally used in an inconsistent and imprecise manner.

[18] See DCI, 1979.

[19] Grabo, 2002, pp. 3–4.

[20] DCI, 1979; Grabo, 2002, pp. 3–4.

[21] George and Holl, 1997, p. 5.

Scenarios and Indicators: Are We Right?

Some efforts to improve warning have focused on bureaucratic and organizational changes, most of which have not led to the anticipated improvements in the IC's ability to warn.[22] Other efforts have focused on improving the IC's ability to imagine compelling and creative scenarios that might break away from the groupthink that often results from long-term focus on specific problems.[23] Analysts examining problems over a long period of time tend to develop perspectives that frequently fail to account for changes in the adversary's objectives, capabilities, and perceived security needs. Analyses of Russian operations since 2008 have attempted to identify new indicators that might improve the ability to identify Russia's preparations for hostilities at early stages.[24] Although this approach has its merits—better indicators would certainly be helpful and could lead to improved models—it could also lead to disjointed efforts focused on "boutique" or novel solutions at the expense of basic, yet still critical, research into how Russian leaders prepare for and make decisions about war. Russia's military modernization efforts since 2008 have led to significant improvements in many areas and highlight a wide variety of operational scenarios ranging from indirect action to rapid, conventional military deployments and operations.[25] Significant improvements have been made in the overall readiness, mobility, and command and control of Russia's military since 2008. There are commonalities across these areas, but there have also been important divergences in objectives, force types, and operational patterns. The countries targeted in Russia's operations raise questions about the extent to which Russian political and military leaders must prepare for outside intervention and prolonged conflict. Recent cases suggest that Russian leaders may have assessed that their actions would not precipitate either intervention or prolonged conflict; however, scenarios involving NATO allies are likely to present a different calculus.

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[22] Betts, 1982, pp. 16, 286–287; Kam, 1988, p. 221.

[23] Recent studies that have highlighted these problems include National Commission on Terrorist Attacks Upon the United States, *The 9/11 Commission Report: Final Report of the National Commission on Terrorist Attacks Upon the United States*, New York: W. W. Norton & Company, 2004; Bob Graham, Jim Talent, and Graham T. Allison, *World at Risk: The Report of the Commission on the Prevention of WMD Proliferation and Terrorism*, New York: Vintage Books, 2008; Commission to Assess the Ballistic Missile Threat to the United States, *Report of the Commission to Assess the Ballistic Missile Threat to the United States*, Washington, D.C., July 15, 1998; *Recommendations of the Jeremiah Report*, Washington, D.C.: National Security Archive, George Washington University, MORI Doc. ID 406297, June 2, 1998.

[24] Studies dealing with war mobilization include Gustav Gressel, *Russia's Quiet Military Revolution, and What It Means for Europe*, European Council on Foreign Relations, 2016; Giles, 2016; Andrew Monaghan, *Russian State Mobilization: Moving the Country on to a War Footing*, London: Chatham House, May 2016; Julian Cooper, *If War Comes Tomorrow: How Russia Prepares for Possible Armed Aggression*, London: Royal United Services Institute, Whitehall Report 4-16, August 2016.

[25] See Gressel, 2016; Keir Giles, *Russia's "New Tools" for Confronting the West: Continuity and Innovation in Moscow's Exercise of Power*, London: Chatham House, The Royal Institute of International Affairs, March 21, 2016.

From this standpoint, the IC faces several challenges in its efforts to develop new and effective indicators for potential Russian actions, particularly in its posture toward NATO's eastern flank. A key issue will revolve around whether the IC has the capacity to perform the required detailed research over a sustained period of time.[26] The sorts of detailed indicator sets used to monitor Soviet military activities in the Cold War are probably beyond the IC's current ability to develop and monitor, due to competing collection and analytic priorities.

NIE 4-1-84, *Warning of War in Europe*, is an excellent example of an earlier, detailed indicator set in which multiple assessed COAs for a Soviet attack into Western Europe were laid out.[27] These COAs were informed by a body of intelligence detailing Soviet planning concepts, force posture, and doctrinal concepts guiding force employment. The COAs addressed in NIE 4-1-84 included (1) an attack from a peacetime posture, (2) an attack with two fronts, (3) an attack with three fronts, and (4) an attack with five fronts.[28] Each COA contained an IC assessment of the rationale and logic that likely would underpin the choice of it, the required preparations, and likely warning times given the extent of required preparation and the IC's capability to monitor these activities.

In addition, the NIE discussed a broad range of military, political, and economic preparations that would accompany each potential COA. A key point raised was the impact that war preparations would have on the civilian domain. The NIE pointed out that the preparations would occur early, and the reporting on them would be incremental, leading to increased ambiguity and varying interpretations of the meaning these indicators might have for warning of war.[29] Later, the report examined the Warsaw Pact National Defense Readiness Plan (or System) and outlined the general characteristics of peacetime-to-wartime transition processes, including national defense readiness, mobilization, economic conversion to wartime posture, and civil defense preparations.[30] The NIE also addressed (1) increased national defense readiness, (2) threat-of-war national defense readiness, and (3) full national defense readiness and the corresponding activities that were performed in each case.[31]

The NIE provided an overview of how the Warsaw Pact would go to war. It discussed not only the general perceptions among Soviet leaders about the likely paths to war, but also the range of civil and military preparations necessary for the Soviet Union and its allies to transition to a wartime footing. The primary areas it addressed were the Soviet decisionmaking process,

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[26] Dickey, Lake, and Shachtman, 2014; Shane Harris, "Washington's Civil War over Russia Intel," *Daily Beast*, October 12, 2015; "Congress Probing U.S. Spy Agencies' Possible Lapses on Russia," 2015; Mehta, 2015.

[27] DCI, 1989.

[28] DCI, 1989, pp. 11–16.

[29] DCI, 1989, p. 20.

[30] DCI, 1989, p. 33.

[31] DCI, 1989, p. 33.

Warsaw Pact consultations, and the psychological preparation of the Soviet population.[32] The report also detailed the economic, civil defense, and military preparations that would need to be undertaken prior to war.[33]

This NIE demonstrates the level of detail the IC was able to develop on specific indicators for potential Soviet military operations. It reflected a level of effort in both collection and analysis that went well beyond general statements of military capabilities and the Warsaw Pact and Soviet military dispositions, and it also provided a robust discussion of those mechanisms that Soviet leaders viewed as essential for transitioning their population to a wartime footing. The scope of the COAs in the NIE was much broader than the scope of recent hypothesized future Russian operations; coupled with an analysis of how the Soviets would go to war, the COAs considered provided a means by which IC analysts and decisionmakers could understand more clearly the indicators they monitored. Although Russia and its military are not the same entities as those of the Soviet Union, the IC's requirement for expertise, experience, and in-depth research has not diminished. This is particularly true for analytic topics central to warning, such as logistics, mobilization, and command and control.

Another key factor in determining whether the IC is currently focused on the right scenarios and associated indicators is the rapidly changing nature of the threat. The earlier, detailed work was focused on major military operations. The IC's ability to warn was tested several times in the course of the Cold War, as the Soviets invaded Hungary, Czechoslovakia, and Afghanistan. Furthermore, many of the lessons learned from IC efforts to understand how the Soviet military operated led to improved understanding of other militaries and how other nations prepare for war.[34] Today's warning challenges associated with Russia's renewed assertiveness are more diverse and are unlikely to permit a similar sustained, in-depth focus on major military operations. One notable divergence is the speed with which Russian military reforms have occurred and the implications of these changes for the IC's ability to warn; it must be noted, however, that the qualitative impact and novelty these changes present are at times overstated. As some analysts have argued, many areas essential to Russia's recent operations—e.g., indirect warfare, mobilization, and reflexive control—were also prominent emphasis areas for the Soviet military.[35]

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[32] DCI, 1989, pp. 34–35.

[33] DCI, 1989, pp. 36–38.

[34] Allen, 1998, pp. 33–44.

[35] Sources that describe the continuity between Soviet and Russian thinking in several areas include Timothy L. Thomas, "Russia's Reflexive Control Theory and the Military," *Journal of Slavic Military Studies*, Vol. 17, 2004, pp. 237–256; James Q. Roberts, *Maskirovka 2.0: Hybrid Threat, Hybrid Response*, MacDill Air Force Base, Fla.: Joint Special Operations University Center for Special Operations Studies and Research, Occasional Papers, December 2015; Maria Snegovaya, *Putin's Information War in Ukraine: Soviet Origins of Russia's Hybrid Warfare*, Washington, D.C.: Institute for the Study of War, Russia Report I, September 2015; Giles, 2016.

Despite the Soviet Union's collapse and the military reforms that have been under way since 2010, earlier analyses on warning of Soviet attack demonstrate that there is a wide range of factors that Russian leaders may consider in a future conflict. This is particularly true of any operation that might involve direct conflict with NATO. Although the Soviet communist party, the Soviet state, and the Soviet military no longer exist, many of Russia's senior political and military leaders were shaped by those institutions and may carry deeply held perceptions about the types of threats for which they need to plan. Recent use of indirect-action methods in Georgia and Ukraine highlight a certain level of conceptual, if not practical, continuity. Likewise, in considering new approaches to warning, IC analysts should consider the requirements that Russian political and military leaders will need to undertake in a wide range of potential scenarios. Russia's recent military operations have all been below NATO's response threshold. As such, Russian leaders could forgo certain categories of preparation that they likely would consider more carefully in a conflict with greater escalation potential, particularly one involving NATO.

Conveyance of Warning

Although it is generally understood by policymakers and commanders, a significant point must be underscored: *conveyance of warning does not connote clarity*. Ambiguity in many situations will persist even after an official warning is delivered. Furthermore, there is currently no single IC warning product. Sources of warning could be many reporting channels, including briefings, individual-agency analytic products, IC-coordinated products, and personal interactions. An additional complication could arise when disagreements within the IC lead to contradictory or competing analyses. Similarly, there may be competing assessments and understanding within or emanating from the policy community as well. Ambiguity and competing interests are likely to complicate warning in many situations.

The most significant consequence of the lack of unity in IC warning is that the IC does not have a product that delivers "unambiguous" warning to decisionmakers. Strategic warning, if provided at all, will likely be ambiguous, largely because nonmilitary indicators frequently are unclear, and many adversaries—including Russia—attempt to maintain this level of ambiguity through deception, operational security, and denial of information. As a result, decisionmakers are forced to reach conclusions based on incomplete and often unclear information. This dynamic has a significant impact on how we understand the limits of what warning can provide and the recommendations we might make to improve the IC's ability to warn.

3. Warning of Soviet Union and Russian Events

This chapter provides an overview of key themes from six major warning events involving the Soviet Union or Russia during the past 50 years. The events are not summarized or analyzed individually; rather, the focus is on themes that help identify areas where the IC has had success and areas where it has been challenged. The chapter does not present a scorecard of the community's work, nor does the discussion highlight instances in which decisionmakers did not heed warnings from the IC. Each of the events entailed some challenges that either limited or delayed the IC's ability to warn. Several also raised questions regarding decisionmakers' ability and readiness to respond to crisis events. This report considers the intelligence and policy issues together to show the symbiotic relationship that underpins the warning-response dynamic.[1] The intelligence issues involved in each event are described, and contributing factors relevant to how the IC monitored and assessed the events are outlined thematically.[2]

Bias is a core concern in the development of analysts' assessments. It is also a key element in the decision process of policymakers and commanders. Within the IC, analytic bias has long been recognized as a factor contributing to failures that occur and as a result has received considerable attention from the IC's leading analysts.[3] The themes addressed in this study are all connected to the issue of analytic bias. They include (1) Soviet or Russian activities designed to condition the expectations of outside observers, (2) the use of denial and deception to mask preparations and intent, (3) the degree to which the IC was able to attain information on Soviet or Russian activities as these crises progressed and the availability of indicators, (4) IC understanding of Soviet or Russian leadership intent, and (5) the use of indirect action as a tool to sow confusion and delay Western responses.

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[1] These elements are discussed in greater detail in Chapter 4.

[2] The IC organization is intentionally not addressed in this study. Past efforts to reform the IC's warning capability have involved reorganization and shuffling of IC responsibilities. While in many respects these changes made sense, later studies have demonstrated that they improved the IC's warning capability only marginally, if at all. In particular, this report does not discuss recent changes in the IC's warning structure that removed the NIO-W and dispersed warning responsibility across the IC, primarily because many current and former senior IC managers (including former NIO-Ws, their deputies, and members of the National Warning Staff) believe that these changes have not necessarily led to better or worse warning capabilities. These officials believe that changes can be successful as long as the IC maintains an appropriate level of emphasis and training on warning issues.

[3] Kam, 1988, p. 214. Also see Heuer, 1999, p. 5; Rob Johnston, *Analytic Culture in the U.S. Intelligence Community: An Ethnographic Study*, Washington, D.C.: Central Intelligence Agency, Center for the Study of Intelligence, 2013, p. 10; Randall H. Pherson, "The Tradecraft of Warning: Overcoming Cognitive Barriers," paper prepared for Seminar on the Tradecraft of Warning: New Approaches and New Thinking, hosted by the ODNI's National Intelligence Council and the State Department's Bureau of Intelligence and Research, February 20, 2009, p. 1.

Themes from Warning Events

Conditioning, denial and deception, and indirect action all contribute in some way to reinforcing analysts' biases and perceptions of reality. Betts argues that "failures may not be due just to cognitive rigidity but to the ambiguity present in any disconfirming data."[4] These three factors all focus on increasing the ambiguity for analysts and decisionmakers, partly to create confusion but also to slow decisionmaking and responses as observers attempt to make sense of a situation. Furthermore, they at times present information that may confirm expectations or deny information that signals preparations and intent.

Indicators and leadership intent are also areas in which analytic bias can influence the IC's ability to warn. In the absence of data regarding an adversary's doctrine, objectives, operational concepts, and training patterns, analysts are forced to rely on their own templates, which are most likely shaped by U.S. concepts. Indicators based on these concepts may embed biases in analysts' minds in ways that are difficult to overcome. In particular, as new evidence regarding an adversary's actual methods for operating becomes available, information that disconfirms earlier assessments will often have to meet a higher standard to change perceptions and estimates.[5] Similarly, expectations of how foreign leaders will react in a given situation are often based on analysts' expectations of rational and reasonable behavior rather than on a thorough understanding of perceptions shaping those leaders' decisions.[6]

The IC exerts considerable effort to combat analytic bias. For example, Intelligence Community Directive (ICD) 203 is designed to improve the quality of IC analysis. Objectivity is the first of nine analytic tradecraft standards designed to prevent analysts from being "unduly constrained by previous judgments when new developments indicate a modification is necessary."[7] The ICD highlights the need for "reasoning techniques and practical mechanisms that reveal and mitigate bias."[8] Analytic training programs, product evaluations, and the use of structured analytic techniques are all tools currently in use within the IC to address this persistent concern.[9] The themes discussed in this chapter all likely contributed to or reinforced analytic biases in historical and recent warning events.

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[4] Betts, 1982, p. 123.

[5] Betts, 1982, p. 123. See also Grabo, 2002, p. 53. Grabo points out that indicators, to the greatest extent possible, should be based on an adversary's doctrine, practice, and plan. When information in these areas is not available, analysts must rely on other practical or theoretical considerations for developing indicators.

[6] Graham Allison and Philip Zelikow, *Essence of Decision: Explaining the Cuban Missile Crisis*, New York: Longman, 1999, pp. 80–81.

[7] Director of National Intelligence, 2015, p. 2.

[8] Director of National Intelligence, 2015, p. 2.

[9] An overview of IC use of structured analytic techniques today is presented in Artner, Girven, and Bruce, 2016.

Denial and deception played a conditioning role in some of the events and is closely linked to indirect action in some instances. For this study, events have been placed in the most relevant categories, but with the understanding that some may demonstrate multiple attributes.

The events chosen to examine how the U.S. IC warned against the Soviet Union or Russia are (1) the Cuban missile crisis, (2) the Soviet invasion of Czechoslovakia, (3) the Soviet invasion of Afghanistan, (4) Russia's invasion of Georgia, (5) Russia's invasion of Crimea and operations in eastern Ukraine, and (6) Russia's deployment to Syria. The central themes in these events were also present in a wider body of warning failures that did not involve Soviet or Russian operations. Additional examples are provided to help illustrate practices that have proven effective in achieving surprise.[10] These examples all have commonalities that shape our recommendations for improving warning.

Conditioning

A key element contributing to surprise in several historical examples was conditioning, or the habituation of key activities or deployments to create in the target's mind a new sense of normalcy.[11] Conditioning activities are effective in reducing the diagnostic value of key indicators and limiting reaction time. They have factored heavily in Soviet and Russian operations since the Soviet invasion of Czechoslovakia in August 1968. Four of the events considered in this chapter—the Soviet invasions of Czechoslovakia and Afghanistan and the Russian incursions into Georgia and Ukraine/Crimea—involved some type of activity that likely constitutes conditioning.

Prior to its invasion of Czechoslovakia, the Soviet Union announced a series of Warsaw Pact exercises that would take place in Czechoslovakia and Poland in June 1968. This exercise, named Sumava, provided cover for the introduction and maintenance of Warsaw Pact forces in Czechoslovakia. Although the exercise was supposed to have ended on June 30, Soviet news agency TASS retracted its announcement that the exercise had ended to provide cover for continued troop presence.[12] Subsequently, the Soviets announced a rear-services exercise covering an area from Latvia to Ukraine. The exercise involved recalling reservists,

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[10] Additional examples include North Korea's invasion of South Korea in 1950, China's intervention in the Korean War in 1950, the Suez Crisis of 1956, the Six-Day War in 1967, the Yom Kippur War in 1973, and Iraq's invasion of Kuwait in 1991. See Allen, 1998, pp. 33–44; Abraham Ben-Zvi, "The Study of Surprise Attacks," *British Journal of International Studies*, Vol. 5, No. 2, July 1, 1979, pp. 129–149; Betts, 1982; Michael I. Handel, "The Yom Kippur War and the Inevitability of Surprise," *International Studies Quarterly*, Vol. 21, No. 3, September 1, 1977, pp. 461–502; Kam, 1988; Barton Whaley, *Stratagem: Deception and Surprise in War*, Norwood, Mass.: Artech House, 2007.

[11] Betts, 1982, p. 66. One prominent example is the Israeli Air Force (IAF) training activity prior to its attack on Egyptian airfields at the outset of the Six-Day War in 1967. The IAF had modified its training patterns as early as two years prior to the initial strike. This modification established a baseline of normal activity for the Egyptian military that removed what would have been a critical indicator.

[12] Cynthia M. Grabo, "Soviet Deception in the Czechoslovak Crisis," *Studies in Intelligence*, Vol. 14, No. 1, Spring 1970, pp. 19–34.

requisitioning civilian transportation assets, and bringing decommissioned military equipment back on line.[13] Additional exercise activity involved a command post and communications exercise involving Soviet, East German, Czech, and Polish forces inside Czechoslovakia that ran from late July until August 10 and an air-defense exercise that ended on August 20.[14] The relatively lengthy period of exercise activity led the majority of the IC's analysts to conclude that these were, in fact, exercises and not a mobilization and deployment of forces for invasion.[15] Further, the buildup, under the guise of maneuvers, led to a "cry wolf" effect that was accentuated by routine press leaks from Western governments.[16]

Similarly, the IC concluded that Soviet force deployments and activities prior to entering Afghanistan in December 1979 were exercises or shows of force rather than preparations for an invasion.[17]

Recent Russian operations in Georgia and Ukraine have continued the practice of exercises serving as both signals and cover activities for military operations. In 2008, Russian forces conducted exercise Kavkaz 2008 in the North Caucasus Military District, which ran from mid-July until August 4. The numbers of forces involved in the exercise were underreported in the Russian press to dispense with any obligations to invite foreign observers.[18] In addition, a sizable number of forces did not depart once the exercise had concluded, and they eventually were used during the invasion on August 8.[19]

Prior to Russia's invasion and annexation of Crimea in March 2014, several exercises took place involving multiple branches of Russia's military. Many of the exercises were surprise inspections designed to test readiness. The sixth exercise began on February 26 and involved 150,000 servicemen, 90 aircraft, 120 helicopters, 880 tanks, 1,200 other pieces of equipment, and 80 ships.[20] As this surprise inspection commenced, the Russian Ministry of Defense issued

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[13] Grabo, 1970.

[14] CIA, *The CIA and Strategic Warning: The 1968 Soviet-Led Invasion of Czechoslovakia*, Washington, D.C.: undated, pp. 9–10; Whaley, 2007, pp. 522–523; Grabo, 1970, pp. 29–30.

[15] Grabo, 1970, p. 30.

[16] Whaley, 2007, p. 521.

[17] Douglas MacEachin, *Predicting the Soviet Invasion of Afghanistan: The Intelligence Community's Record*, Washington, D.C.: Center for the Study of Intelligence, 1999, p. 22. Also see DCI, Interagency Intelligence Memorandum 80-10017JX, *The Soviet Invasion of Afghanistan*, October 1980, pp. 17–18.

[18] C. W. Blandy, *Provocation, Deception, Entrapment: The Russo-Georgian Five Day War*, Shrivenham, UK: Advanced Research and Assessment Group, Defence Academy of the United Kingdom, March 2009, p. 5.

[19] Andrei Illarionov, "The Russian Leadership's Preparation for War, 1999–2008," in Svante E. Cornell and S. Frederick Starr, eds., *The Guns of August 2008*, Armonk, N.Y.: M. E. Sharpe, 2009, p. 73.

[20] Johan Norberg, *Training to Fight: Russia's Major Military Exercises 2011–2014*, Swedish Defense Research Agency, November 2015, pp. 49–50. Norberg cites the following sources for these numbers: Ministry of Defense of the Russian Federation, "Voiska (sily), zadeistvovannye v proverke boevoi gotovnosti perebrasivaiutsia v aznachennye raiony," February 27, 2014, and Ministry of Defense of the Russian Federation. "Severny i Baltiiski floty v ramkakh vnezapnoi proverki boevoi gotovnosti narashivaiut sostav sil v akvatoriiakh Barentseva i Baltiiski morei," February 27, 2014.

16 reports about it, each reiterating the number and types of forces involved.[21] These reports also included the distances from which the forces were deployed, to emphasize their "endurance, persistence, and durability."[22] As events developed, senior IC officials were accused of not providing adequate warning, but they countered that they had regularly provided decisionmakers with updates and potential Russian COAs.[23]

These examples illustrate how "routine" military deployments or exercise activity can be used as a means to cover operational intent and preparations. Successful use of such activities can reduce an adversary's sensitivity to certain indicators. While most such exercises are nothing more than routine events, if performed over an extended period of time, they may reduce the intended target's sensitivities and decrease the diagnostic importance of key indicators. Furthermore, these events may lead intelligence organizations to "cry wolf"—potentially desensitizing intelligence analysts and policymakers alike. Although there is a risk of overstating this effect, the more routine an activity becomes, the less it serves as a marker capable of signifying change from peacetime norms to potential threat.[24]

Conditioning may also include the deployment of additional forces to a region in ways that are wholly consistent with Russia's threat perceptions but not necessarily indicative of an impending attack. For instance, deployments of additional or supplementary air and air-defense units may reflect a heightened concern that is not connected to plans to conduct offensive operations in a designated time frame. Likewise, the addition of new ground units to the Western Military District cannot automatically be interpreted as a short-term indicator or an act of conditioning.[25] Nevertheless, these types of action can condition analysts' sensitivity and reduce the diagnostic value of key indicators.

Denial and Deception

Denial and deception is closely linked with conditioning, but it encompasses a much wider range of activities. Denial includes "activities and programs designed to eliminate, impair, degrade or neutralize the effectiveness of intelligence collection," while deception refers to the "manipulation of intelligence collection, analysis, or public opinion . . . with the intent of

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[21] Norberg, 2015, p. 50.

[22] Norberg, 2015, p. 50.

[23] Jeremy Herb, "Clapper: Ukraine Was Not an Intelligence Failure," *The Hill*, March 10, 2014.

[24] McCreary, 1983, p. 76. McCreary argues that the "cry wolf" syndrome should not be confused with near misses, which he asserts "are mixes of accurate and inaccurate judgements, which are better termed as near misses and remote misses." McCreary believes that both of these outcomes should be considered successes because they frequently lead to heightened sensitivity.

[25] Thomas Grove, "Russia Says It Is Creating Three New Divisions to Counter NATO Moves," *Wall Street Journal*, May 4, 2016.

manipulating perceptions of policy makers in order to influence their actions and decisions."[26] The impact of denial and deception is hard to overstate. It has played a significant role in many historical intelligence failures,[27] including several warning events involving the Soviet Union or Russia. As in the case of conditioning, official media reporting often has obscured the actual scale of activities involved (e.g., Kavkaz in 2008), provided false information on exercise dates (e.g., Sumava in 1968), or provided cover for operational activities outside the scope of an exercise (e.g., Georgia and Ukraine).

Many of Russia's current denial and deception capabilities consist of such traditional *maskirovka* (deception) activities as camouflage, subversion, sabotage, propaganda, and psychological operations.[28] Recent denial and deception efforts have included the use of unmarked military equipment, cyber operations, passportization,[29] clandestine infiltration of military personnel, and media manipulation. These actions may not be sufficient to comprehensively mask Russian operations, so they are generally used to delay reactions within the target state and the international community. Deception is not necessarily meant to mask all preparatory or early activities. Rather, its primary purpose is to provide an initial, insurmountable advantage by creating doubt sufficient to slow down an adversary's reaction time. The activities do not need to be flawless or sophisticated. They need only to be good enough to create confusion.

Denial and deception activities were present in all six of the events studied here. Prior to the invasion of Czechoslovakia in 1968, Warsaw Pact exercises were used as a cover for force movements that would later be used for the invasion itself. Analysts reported these exercises in a variety of NATO and U.S. intelligence publications.[30] In its attempt to mislead the United States and NATO, the Soviet media reported that these exercises were nothing more than routine exercises that occurred every year at the same time.[31] This deception was relatively simple, and later examples included similar actions. The use of exercises to mask military movements played a role in Russian incursions in both Crimea and Georgia. Furthermore, the use of special-forces

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[26] Roger Z. George and James B. Bruce, *Analyzing Intelligence: Origins, Obstacles, and Innovations*, 2d ed., Washington, D.C.: Georgetown University Press, 2008, p. 280.

[27] George and Bruce (2008, pp. 193–204) examined eight historical intelligence failures: Pearl Harbor, the Cuban missile crisis, the Yom Kippur War, the Iranian Revolution, India's nuclear test, the Soviet biological weapons program, 9/11, and Iraq's weapons-of-mass-destruction (WMD) program. They found that in five of the eight cases (Pearl Harbor, the Cuban missile crisis, the Yom Kippur War, Soviet biological weapons, and Iraq's WMD), deception was a factor, and that denial was a factor in all cases.

[28] Roberts, 2015, p. 1.

[29] Passportization is a Russian program that gives Russian passports to foreign citizens, primarily in former Soviet territories. It has been used extensively in Abkhazia, South Ossetia, Crimea, and eastern Ukraine.

[30] Euan G. Davis and Cynthia M. Grabo, "Strategic Warning and Deception," *Studies in Intelligence*, Vol. 17, Spring 1973, p. 38; Whaley, 2007, p. 521.

[31] Davis and Grabo, 1973, p. 38.

troops in foreign uniforms (i.e., in Afghanistan) or uniforms with no insignia (i.e., in Crimea) succeeded in creating confusion and delaying responses from the targeted governments.

In the Cuban missile crisis, denial and deception efforts to hide the nature of hardware deliveries were buttressed by Soviet Premier Nikita Khrushchev's assurances that missiles would not be deployed to Cuba. Although this deception eventually was uncovered, in other operations, it was effective in creating doubt and delaying reactions as operations unfolded. A particular challenge that must be considered when evaluating the IC's warning capabilities against Russia is the extent to which U.S. and NATO collection and analytic capabilities will be able to identify deception, particularly in situations where Russian units are already forward-located and indirect warfare operations are under way. Currently, IC analysts receive limited, if any, training in countering denial and deception, and education and training opportunities to improve these capabilities are few.[32]

In Georgia and Crimea, Russian forces—both regular and special—also attempted to conceal their status by wearing uniforms without insignias.[33] These activities were not designed to prevent detection and provide plausible deniability indefinitely, nor were they elaborate. Russia intended them to create confusion in the target countries and among potential Western responders. The U.S. and European responses were subsequently slowed as both governments and publics grappled with the events that were unfolding.

Available Information and Indicators

In each of the six events, the IC tracked numerous key indicators or events. The community was aware of abnormal levels of activity, and the activities seemed to be responding to international tensions at the time they were initiated. In each case, the information about potentially troubling Soviet or Russian activities was abundant. As discussed earlier, the IC had spent considerable time developing indicator lists for different scenarios during the Cold War. During the Cuban missile crisis, the IC concluded that the Soviet deliveries to Cuba were intended to "substantially improve air defense and coastal defense capabilities in Cuba" because the Soviets hoped to enhance Castro's defensive capabilities and deter future attempts to overthrow his regime.[34] IC analysts were able to detect the transfer of a dozen SA-2 SAM systems and their subsequent deployment to fixed sites, a dozen MIG-21s, tanks, self-propelled artillery, and Komar-class patrol boats.[35] The IC's ability to detect specific systems at the time demonstrates that the community was well aware of the military-equipment deliveries, with more

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[32] This conclusion was drawn from interviews with current and former IC managers conducted during other RAND projects.

[33] Snegovaya, 2015, pp. 11–12.

[34] Office of National Estimates, *The Military Buildup in Cuba*, Special National Intelligence Estimate 85-3-62, September 19, 1962, p. 2.

[35] Office of National Estimates, 1962, p. 5.

likely to follow. But the ability to monitor these shipments and determine the types of systems being delivered provided little insight into Soviet leadership intentions regarding Cuba. In this case, the IC's close monitoring of conventional systems presented ample information to support an alternative, reasonable conclusion that the Soviet shipments were designed to build up Cuba's defenses.

The same largely held true for the later Soviet invasions of Czechoslovakia and Afghanistan. IC analysts were able to effectively monitor the types of forces being moved, general categories of activity, and other preparations, including mobilization efforts and logistics preparations. As in the instances of conditioning, the IC monitored military indicators based on the major exercises under way at the time.[36] The IC also closely followed nonmilitary indicators, such as official Soviet press reports and leadership meetings and movements. It monitored the pace and frequency of key Politburo meetings held to discuss the situation in Czechoslovakia and observed the departure from Moscow and subsequent return of Politburo members in early and mid-August 1968.[37]

In the lead-up to the Soviet invasion of Afghanistan, IC analysts were able to observe and monitor several similar indicators. As early as August 1979, analysts began to see activity within key units just north of the Soviet border with Afghanistan. This activity included a Guards Airborne Division engaged in specialized loading techniques with advanced military transport aircraft.[38] The IC was also able to identify a wide range of activity that included the presence of military advisers, involved logistics, and revealed support operations that seemed to suggest either large-scale signaling or preparations for military operations. As events in Afghanistan continued to spiral out of control, there were several indicators that involved the introduction of Soviet special forces units and high-level political deliberations. Although it was aware of all these indicators, which correlated with the IC's indicator list at the time, the IC remained uncertain about the Soviet Union's actual role in Afghanistan's internal political power struggles and whether its leaders were contemplating potential military options or simply signaling.[39] This suggests that even when the IC has well-developed indicators and the capability to monitor them, the indicators can lead analysts to plausible, but inaccurate, explanations regarding the nature of the activities being monitored.

The IC also had no shortage of pre-conflict indicators of more-recent Russian operations in Georgia, Ukraine, and Syria. Despite the diminished priority of gathering intelligence on Russia—a fact reflected in the IC's overall level of collection and analysis devoted to the Russian problem—there was a wide-scale awareness of Russian military activity during each

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[36] Grabo, 2000, pp. 522–523.

[37] CIA, undated, pp. 14–15.

[38] MacEachin, 1999, p. 22.

[39] MacEachin, 1999, pp. 24–27.

period.[40] In short, the IC possessed considerable information about Russian military movements in the recent Russian aggression in Georgia, Ukraine, and Syria. The primary problem that inhibited both U.S. and NATO responses was described by former CIA Director Michael Hayden, who commented, "This is less a question of how many collection resources we throw at Russia and more broadly about the analytic challenge of understanding Putin's mind set."[41] As these three events reveal, quality indicators that reflect the IC's best knowledge of how an adversary makes decisions and operates are important. Absent these indicators, the United States and its allies would have little basis for anticipating potential conflicts and hot spots; however, even when numerous indicators are present, they are often not sufficient to reveal Soviet or Russian intentions in time to prevent surprise or enable timely policy responses.

Leadership Intent

In many respects, the IC is capable of identifying anomalous activities through collection and analysis. The indicators in the events studied here clearly make this point. The IC's primary challenge in many of these situations was understanding the motivations and intentions of Soviet or Russian decisionmakers. Commenting on the IC's assessment of Soviet ballistic missile emplacements in Cuba, Sherman Kent noted, "No estimating process can be expected to divine exactly when the enemy is about to make a dramatically wrong decision . . . we could not believe that Khrushchev could make such a mistake."[42] In several other situations, IC analysts and policymakers also did not conclude that Soviet or Russian activities were necessarily pretexts for military operations, largely because they had limited or conflicting information on leadership intent. As a result, they argued that Soviet or Russian interests would not be advanced by the aggressive courses of action the leaders eventually chose.

The most significant challenge for analysts remains adversary intentions, primarily because "intentions are sometimes different from what state decisionmakers will actually do."[43] Furthermore, most policymakers may not be able to fully predict an adversary's emotional responses to situations in which its goals and values are changed by evolving developments. These situations highlight the difficulties Kent and the IC faced during the Cuban missile crisis—often, the logic of risk versus reward is not what analysts anticipate and is guided by a wider range of perceptions and internal drivers that are difficult to grasp.

Another dynamic that complicates the problem of understanding adversary intentions is the role played by the leaders of U.S. partner nations. In the invasions of Czechoslovakia,

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[40] Dickey, Lake, and Shachtman, 2014; "Congress Probing U.S. Spy Agencies' Possible Lapses on Russia," 2015; "US Intelligence Lapse on Russian 'Surprise' Moves in Syria Probed," *Newsmax*, October 8, 2015; Harris, 2015.

[41] Dickey, Lake, and Shachtman, 2014.

[42] Michael Douglas Smith, "The Perils of Analysis: Revisiting Sherman Kent's Defense of SNIE 85-3-62," *Studies in Intelligence*, Vol. 51, No. 3, 2007, p. 4.

[43] Betts, 1982, p. 54.

Afghanistan, Georgia, and Ukraine, the political actions of U.S. foreign leaders played a significant role in Soviet and Russian decisions to invade. Understanding adversaries is thus not the only variable influencing the ability to provide timely warning. Understanding the intentions of third-party leaders is also essential and has proven to be a difficult complication. In 2008, U.S. policymakers were concerned that Georgian President Saakashvili would feel compelled to respond to Russian activities in Abkhazia because of internal Georgian politics, most notably a parliamentary election scheduled in late May. The U.S. policymakers were hearing an increasing number of discussions through diplomatic channels indicating that Georgian leaders, including Saakashvili, were coming to the conclusion that they had to respond to Russian provocations in the near term or risk losing Abkhazia.[44] These discussions were never official; however, they involved U.S. and European Union representatives and involved all levels of Georgian security officials, including the president. They reflected a sense of desperation and a perceived imperative to protect Georgian citizens.[45] Russian leaders did not miss the opportunity to use these discussions to their advantage. The Russian media broadcast reports that Georgia was planning military action, and the Russian defense chief warned that there would be a war in Georgia if steps were not taken to avoid conflict.[46]

One of the most common recommendations following a warning failure is to "improve collection."[47] This is often accompanied by efforts to create and monitor new warning indicators. In most cases, however, the "lack of information and warning indicators is usually not the reason for failure of estimates."[48] The primary analytic challenge to successful warning remains that of accurately identifying and understanding leadership intent during crisis situations. Improving IC understanding of adversary intentions is an enduring problem, particularly as it relates to warning decisionmakers of adversary objectives and planning in specific situations. Decisionmakers seeking better warning must understand the limits this long-term challenge imposes on the warning products they are likely to receive in crisis situations and the implications those limits have on their ability to respond in a timely fashion.

Indirect Action

Indirect action—e.g., intimidation, political meddling, subversion, pressure, and shows of force—featured as prominently in the earlier Soviet operations as it does today. Military forces can perform indirect actions both in peacetime, as part of nonmilitary operations such as

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[44] Ronald Asmus, *A Little War That Shook the World: Georgia, Russia, and the Future of the West*, Basingstoke, UK: Macmillan, 2010, p. 152.

[45] Asmus, 2010, p. 151.

[46] Asmus, 2010, p. 149.

[47] Kam, 1988, p. 222.

[48] Kam, 1988, p. 222.

peacekeeping, and in war.[49] Most significantly, indirect and direct warfare do not exist in an either/or relationship—they can be practiced simultaneously. Indirect action was a component in two of the three Soviet events examined in this study. The Soviet coup carried out prior to the invasion of Afghanistan consisted of Spetznaz troops being inserted into Kabul in Afghan Army uniforms. As part of the operation, they seized and cordoned off key political and military facilities as other forces attacked the presidential palace.[50] Indirect-warfare actions in Czechoslovakia and Afghanistan included the use of false media reports designed to influence or shape responses in victim countries or their allies, the use of intelligence services to foment internal dissent and co-opt corrupt leaders and security officials, and diplomatic coercion.

These operations also figured prominently in both Georgia and Ukraine. Prior to Russia's invasion of Georgia, Moscow had developed key themes that focused on painting Saakashvili as the aggressor. Moscow contended that Saakashvilli's actions forced Russian intervention to protect Russian citizens.[51] A key element in advancing this story was the deployment of 48 Russian journalists to the area the day before to the Russian operation.[52] Russia also employed advanced media operations in Ukraine and Crimea in 2014. The guiding principle of these operations was to "direct the message or narrative" by controlling language; this was the "first step to the control of meaning, and the manipulation of meaning the first step in the manipulation of politics."[53] The subsequent employment of "political technology" encompassed a full range of media and cyber operations designed to shape public perceptions, obscure facts on the ground, and present orchestrated myths to undermine the adversary government's control.[54]

Russia also relied on a wide variety of nonmilitary measures in Georgia and Ukraine as part of a broader effort to discredit its opponents and set conditions that would eventually permit Russian forces to gain control with a minimum of resistance. Cyber operations played a significant role in both countries, as did the use of Russia's intelligence services to co-opt and discredit corrupt and/or sympathetic local officials.[55] By issuing Russian passports in South Ossetia and Abkhazia, a process known as "passportization," Russian officials were able to claim that their intervention was primarily an effort to protect Russian citizens and compatriots.[56] In

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[49] V. V. Serebryannikov, "Thoughts on the Concept of 'War,'" *Voyennaya Mysl*, October 1, 2004.

[50] MacEachin, 1999, p. 35.

[51] Paul A. Goble, "Defining Victory and Defeat: The Information War Between Russia and Georgia," in Svante E. Cornell and S. Frederick Starr, eds., *The Guns of August 2008: Russia's War in Georgia*, Armonk, N.Y.: M. E. Sharpe, 2009, p. 182.

[52] Goble, 2009, p. 186.

[53] Andrew Wilson, *Ukraine Crisis: What It Means for the West*, New Haven, Conn.: Yale University Press, 2014, p. 21.

[54] Wilson, 2014, pp. 34–36. For additional discussions of specific aspects of these operations, see Giles, 2016.

[55] Mark Galeotti, *Putin's Hydra: Inside Russia's Intelligence Services*, European Council on Foreign Relations, Policy Brief, May 2016, p. 7.

[56] Illarionov, 2009, pp. 56–57.

both Georgia and Ukraine, Russia used irregular forces and local patriotic groups to prevent the appearance of Russian involvement, create confusion among Georgian and Ukrainian security forces, and provide cover for threatening activities by disguising them as local, organic responses to the central government's policies.[57]

Indirect action was an important part of Soviet operations and remains important in Russian operations. It is highly unlikely that its importance will diminish. On the contrary, its use has proven highly effective and will probably increase in the future. This presents a key challenge for warning, because it is unclear whether these actions will provide analysts with diagnostic value as indicators, particularly in cases where they may reflect ongoing activities in other areas of interest. On the surface, it would appear that they are quality indicators; however, our best insights into how indirect activities support larger operations are derived from hindsight. Further complicating their potential value as indicators is the fact that they do not appear to conform to a predictable, doctrinal template in the same manner that many military operations do. Indirect actions, such as "passportization," cyber attacks, and influence campaigns orchestrated by Russian media and intelligence organizations, often take place over extended periods of time. Russia is conducting these types of activities today against NATO and non-NATO nations alike.[58] As such, they might serve, at best, as limited tools to help analysts understand the transition from peace to war.

The Current Russia Warning Challenge

The events in which the themes outlined above were identified are largely viewed as warning failures, though not without some level of disagreement among both policymakers and intelligence analysts. On the basis of the IC's performance in gathering intelligence on Russia since 2008—informed, in part, by statements from policymakers who are consumers of intelligence—one could conclude that there are major shortfalls in the United States' ability to warn. This is particularly relevant in the context of potential Russian operations against the Baltics. However, several key factors raise questions about whether this conclusion is merited. There are definitely shortfalls, but the shortfalls serve to illuminate several persistent problems.

Since the end of the Cold War, and particularly since the 9/11 attacks, Russia's importance as a national security priority has diminished significantly, and this has had an overall negative impact on the intelligence resources devoted to the Russian problem. The 2002 *National Security Strategy of United States* stated that "with Russia, we are building a new strategic relationship"

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[57] Snegovaya, 2015, pp. 11–12.

[58] Julian E. Barnes, "NATO Works to Adapt to More Ambiguous Warfare Techniques," *Wall Street Journal*, February 8, 2016; "From Cold War to Hot War: Russia's Aggression in Ukraine Is Part of a Broader, and More Dangerous, Confrontation with the West," *The Economist*, February 12, 2015; Juris Kaža and David Gauthier-Villars, "Latvia's Wariness over Russia Raises Civil Rights Concerns at Home," *Wall Street Journal*, August 26, 2016.

and "the United States and Russia are no longer adversaries."[59] Later versions echoed partnership with Russia on key issues. Although the strategies expressed concerns about democratic reform and human rights, they did not speak of Russia as a security concern.[60] The National Security Strategy characterized Russia as an aggressor and security concern only in 2015, following its annexation of Crimea and intervention in eastern Ukraine.[61] By this time, the IC's focus on Russia had diminished significantly, along with the numbers of collectors and analysts devoted to monitoring it. This fact was recognized by senior government officials, including the commander of the U.S. European Command and the deputy secretary of defense.[62] Despite having limited resources, the IC was able to monitor most of the relevant Russian activities that were under way prior to hostilities. More recently, the IC has directed an increase in Russia's priority relative to other major issues such as terrorism and China.[63]

During each of the Soviet-era crises, the IC had significant collection assets and analysts devoted to monitoring the Soviet Union.[64] Although the IC has recently increased the personnel and resources targeting Russia to roughly 10 percent of its total collection and personnel resources, this still represents a marked decrease from the roughly 40 percent devoted to the Soviet Union during the Cold War.[65] The number of analysts working on Soviet/Russian issues has fallen from 13,000 at the end of the Cold War to roughly 1,000.[66] In addition, senior leaders have acknowledged a decrease in the level of expertise on Russia.[67] During the Cold War, IC analysts had significantly more information available to them across a wide number of critical topics. Large numbers of analysts could analyze their data sources to identify critical characteristics that formed the basis of the U.S. government's understanding of the Soviet threat, its decisionmaking processes, and the major processes by which the Soviet military transitioned for war. The overwhelming number of analysts and collection assets dedicated to warning of potential Soviet or communist aggression demonstrated clearly that this was the IC's top priority at that time.[68] This priority was reflected in detailed indicator lists, substantial attention to the

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[59] The White House, *The National Security Strategy of the United States*, September 2002, p. 26.

[60] The White House. *The National Security Strategy of the United States*, March 2006, p. 38–39; The White House, *The National Security Strategy of the United States*, May 2010, pp. 11, 44.

[61] The White House, *The National Security Strategy of the United States*, February 2015, p. 25.

[62] Mehta, 2016; Burgess Everett and Josh Gerstein, "Why Didn't the U.S. Know Sooner?" *Politico*, March 5, 2014.

[63] Miller, 2016.

[64] Julian E. Barnes, "NATO's Breedlove Calls for Sharper Focus on Russia Ahead of Departure," *Wall Street Journal*, May 1, 2016.

[65] Miller, 2016.

[66] Miller, 2016.

[67] Jim Garamore, "Work Discusses Russia with Military, Intelligence Leaders," *DoD News, Defense Media Activity*, April 17, 2015; Miller, 2016.

[68] This priority is evident in the terms of reference documents issued for the IC Watch Committee under the DCI's auspices. These terms of reference ran through much of the 1950s and 1960s. See DCI, Directive No. 1/2, *Terms of*

Soviet Union as a warning problem, and detailed products such as the 1980 Interagency Intelligence Memorandum *The Soviet Invasion of Afghanistan: Implications for Warning* and the 1984 NIE *Warning of War in Europe*.[69] In all of the events discussed in this report involving the Soviet Union, collection and analysis were well covered. During each event, collectors and analysts with extensive experience on the Soviet target were able to monitor key political and military activities.

In several of the more-recent events involving Russia, even if the IC had reporting of the decision to invade at its earliest point, policymakers would have had limited time to formulate options, select a COA and implement it. The final Politburo decisions to invade Czechoslovakia and then Afghanistan do not appear to have been made until relatively late in the crises. After the invasion of Czechoslovakia, many IC analysts concluded that the decision to invade may have been made between two key meetings of Czech and Soviet leaders at the end of July and first week of August, approximately two or three weeks prior to the invasion.[70] Similarly, the decision to invade Afghanistan likely came in early to mid-December—only weeks prior to Soviet troops crossing the border.[71] In both cases, even if analysts had known of the plan at the exact moment the Soviet decision was made, the best-case warning scenario would have been a few weeks, and it is unclear what options would have been available to policymakers even if they had been given "unambiguous warning."

Similarly short timelines between decisions and actions have characterized events involving Russia. Senior U.S. decisionmakers were informed and concerned about Russian activities in South Ossetia and Abkhazia as early as April 2008.[72] Some information suggested that the Russian decision to invade was made at about that time. However, with Georgia's close proximity and Russia's forward force presence, any final decision to halt and reinitiate operations into those republics was on a timeline determined by Russian decisionmakers.[73] Likewise, the Russian intervention in Crimea and eastern Ukraine appears to have been decided on a relatively short timeline in response to sudden and unpredictable events in Ukraine, although planning for these operations could have been carried out well in advance. As these examples—along with Russia's Syria deployment—demonstrate, Russian decisions have followed closely on the heels of crisis events (e.g., the collapse of the Yanukovych government in Ukraine and perceived Georgian and NATO provocations). Furthermore, because of

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Reference, Watch Committee of the IAC (11 May 1954), December 15, 1976; DCI, Directive No. 1/5, *Terms of Reference, Watch Committee of the IAC*, effective March 7, 1961; DCI, Directive No. 1/5, *Terms of Reference, Watch Committee of the IAC*, effective August 8, 1962, editorially revised February 27, 1963.

[69] DCI, 1980; DCI, 1989.

[70] CIA, 2010, pp. 11–12.

[71] MacEachin, 1999, pp. 46–48.

[72] Asmus, 2010, p. 152.

[73] Asmus, 2010, pp. 168–169.

geographic proximity and RFAF forward positioning, Russia's leaders can delay a decision until the situation is more critical, even if RFAF actions are discovered.

Frequently, IC analysts are expected to warn about events before an adversary's decisionmakers have settled on a COA. As Hayden noted, it is not clear what options to prevent, deter, or dissuade Russian actions the short period of additional warning would have provided for U.S. and NATO policymakers.[74] The same could be argued for the invasions of Czechoslovakia and Afghanistan. These considerations indicate that regardless of whether or not early warning is provided, the United States and its allies must consider viable policy options prior to any event. To present an effective deterrent, the deliberations must include resource and force-posture considerations. Absent these conditions and the corresponding national security interest, early warning will not help bolster NATO's posture on its eastern flank.

The problem of understanding Russian intentions has likely become more difficult as a result of Russia's current leadership and decisionmaking processes. This is not to suggest that Soviet decisionmaking was transparent—it clearly was not. However, there was a collective Soviet leadership whose meeting and deliberations could be followed to some extent.[75] In contrast, today's Russian leadership decisionmaking cycle is centered on Vladimir Putin and a very small circle of advisers. Their intentions are notoriously difficult to understand, primarily because they are contextual and can change on relatively short notice to adjust to new conditions or information.[76] In this situation, the IC often is forced to rely on processes and activities that provide only indirect reflections of intent.

The IC's ability to warn is clearly stressed. Demands have grown, and less expertise is now devoted to the countries that make up the former Soviet Union, including Russia. Over the past 15 years, priority and resources devoted to Russia generally fell behind those devoted to Afghanistan, Iraq, global terrorism, China, and the Middle East. Now, Russia has emerged as a national security priority and its military planners in multiple commands, crisis support in Ukraine and Syria, and a host of current and long-term policy issues are placing ever-greater demands on the IC's Russia analysts. As Grabo argues in her seminal work on warning, research is the key to warning. In today's environment, the requirement for intelligence to meet immediate needs is likely to inhibit the IC's ability to perform the in-depth research necessary to improve warning. This is particularly the case in situations that might involve escalation, especially with NATO, but only indirect insights into leadership intent are available.

The themes of Russian aggression and the IC's current capabilities identified in this report are not new. With more emphasis now being placed on Russia, the IC's ability to warn would probably be improved by rebuilding the IC's bench of experts and in-depth knowledge of Russia.

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[74] Dickey, Lake, and Shachtman, 2014.

[75] This factor was noted in both the Czechoslovakia and Afghanistan examples discussed earlier.

[76] McCarthy, 1994, p. 7.

The examples presented here should help set boundaries for what decisionmakers realistically can expect in terms of warning; however, they also highlight the need to ensure that warning remains an actual priority rather than a stated priority. Faced with demands for current intelligence, the IC often finds it expedient to sacrifice long-term research to meet immediate needs. In this context, intelligence analysis is not a "free" commodity. Devoting analytic capacity to one subject generally means that capacity cannot be used for another subject, and many areas in which warning has proven important in the past still require expertise and sustained attention.

4. The Warning-Response Dynamic and NATO's Eastern Flank

Although "early warning is a prerequisite both for any prudent decision to act and for effective action itself," many factors contribute to leaders' tendency to delay hard decisions as long as possible.[1] The reasons for the delays vary widely and may include perceived high risks of possible actions, the desire for more clarity in an uncertain situation, and reluctance to modify or discard policies as warning intelligence becomes available.[2] Even in situations where policymakers receive early and convincing warning, they must weigh decisions and potential responses against competing priorities shaped by U.S. national interests and available resources. Events involving the Soviet Union and Russia have clearly presented questions about whether realistic courses of action were available even had unambiguous warnings been received earlier in the crises.

In the context of the current U.S. force posture in Europe and the state of NATO's readiness, the question of whether or not the IC can provide adequate warning will remain a dominant issue. Since the last major U.S. Army units in Europe left in 2012, there has been an increasing concern with the problem of confronting potential Russian aggression in the Baltics. Recent NATO actions following the Wales and Warsaw summits indicate movement in a direction that demonstrates NATO's increased resolve to confront the Russian threat there; however, if Russia decided to mount a major operation in the Baltics, U.S. and NATO decisionmakers would have only limited ready options. Recent war games and analysis have highlighted this challenge. In several scenarios, Russian forces are able to achieve their objectives within 60 hours. Even with significant advanced warning and acceptance by decisionmakers, the United States and its allies would have only a limited capacity to put military options into motion.[3] Other studies have highlighted the threat posed by Russian anti-access/area-denial capabilities against U.S. and NATO efforts to deter and, if needed, respond to Russian military actions.[4] These capabilities present significant challenges to U.S. and allied regional force projection, particularly as they relate to the early employment of NATO airpower. In addition, they complicate the ability to bring forces from outside of Europe to reinforce the limited numbers currently forward-positioned there. The ambiguity in early warning may slow the decision to deploy the NATO Response Forces, including the Very High Readiness Joint Task Force, when there is

[1] George and Holl, 1997, p. v.

[2] George and Holl, 1997, pp. 4–5; Robert Jervis, "Why Intelligence and Policymakers Clash," *Political Science Quarterly*, Vol. 125, No. 2, June 2010, pp. 196–198.

[3] Shlapak and Johnson, 2016, p. 8.

[4] Kathleen H. Hicks, Heather Conley, Lisa Sawyer Samp, Jeffrey Rathke, Olga Oliker, and Anthony Bell, *Evaluating Future U.S. Army Force Posture in Europe: Phase I Report*, Center for Strategic and International Studies, February 2016, p. 2.

disagreement within the alliance on the nature of the crisis.[5] It may take from days to weeks for follow-on forces to arrive, depending on the speed with which NATO decisionmakers can decide on a COA, the readiness posture of these forces, and the speed with which Russian forces can achieve their objectives.[6]

Statements by senior officials in the U.S. government, including then-President Obama, verify that Russia has once again become a matter of national priority and highlight the importance of warning about activities on NATO's eastern flank.[7] NATO leaders have also announced posture changes that include the deployment of four battalions intended to deter Russian aggression.[8] Political resolve, particularly among NATO allies, and future deployments may enhance NATO's ability and willingness to respond; nevertheless, several factors make warning on NATO's eastern flank a particular challenge. Even in the most favorable circumstances, these factors make the warning-response dynamic in the area particularly problematic.

The region's geography and the RFAF's physical proximity, juxtaposed with NATO's very thin posture in the area today, present a significant challenge for warning. Because of their forward location and significant numbers, the Russians do not need to deploy large forces forward to pose a threat to the Baltic states. This situation denies the IC a number of military indicators. Furthermore, Russia's forward forces possess significant advantages in mobility, firepower, and air defenses. Even with NATO's upcoming posture enhancement, Russian forces have an overwhelming advantage. Preparations to bring in additional RFAF units to defend against NATO follow-on attacks likely could be undertaken either after initial operations were under way or relatively late in the pre-conflict preparations. While there may be an increase in indirect action prior to a major conventional operation, such indicators will remain largely ambiguous and difficult to distinguish from similar activities currently under way in a number of countries along Russia's periphery.

In 2013, the RFAF reintroduced no-notice inspections, or "snap" exercises, that have since been carried out on both a territorial and a functional basis.[9] These events present several difficulties for warning and have generated concern among NATO's senior political and military leaders.[10] One immediate concern is that these activities may be intended to condition U.S.

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[5] Hicks et al., 2016, p. 10.

[6] Shlapak and Johnson, 2016, pp. 8–10, Hicks et al., 2016, pp. 10–11.

[7] "Press Conference by President Obama After NATO Summit," The White House, Office of the Press Secretary, July 9, 2016.

[8] Julian E. Barnes and Thomas Grove, "NATO Set to Approve Baltic Force at Warsaw Summit," *Wall Street Journal*, July 7, 2016.

[9] Norberg, 2015, p. 24.

[10] "Press Conference by NATO Secretary General Jens Stoltenberg Following the Meeting of the NATO-Ukraine Commission at the Level of Defence Ministers," North Atlantic Treaty Organization, June 15, 2016; Michael R.

analysts and policymakers into viewing them as the routine, normal course of Russian military activity. In several historical and recent Soviet and Russian examples, exercises have been used to mask military preparations, divert attention, and create confusion.[11] The earlier Soviet exercises involved multiple types of forces, logistics, and mobilization preparations. Since reinstituting the snap exercises in 2013, Russia has performed at least 18 of them nationwide.[12] Furthermore, there have been multiple inspections and exercises involving the Western Military District in various capacities.[13] During one period that began with Russia's invasion of Crimea and ended with its deployment to Syria—February 2014 through September 2015—Russia carried out six no-notice inspections.[14]

Russia's revitalized strategic exercise program also presents several warning concerns, particularly large-scale military operations that may require wider mobilization and integration of nonmilitary governmental organizations. Annual strategic exercises run by the Ministry of Defense involve all organizations concerned with Russia's military security. Past exercises have included the Interior Ministry and the Federal Security Service.[15] These exercises regularly involve participation from all services and multiple military districts across the RFAF. Furthermore, they are designed to improve Russia's capabilities for transitioning from peacetime to wartime. The exercises also involve more-complex scenarios involving senior political decisionmakers and military leaders.[16] Overall, Russia's annual strategic exercises are a concrete reflection of the military reform efforts initiated following its 2008 miscues in Georgia. Along with the now-routine no-notice inspections, these exercises demonstrate Russia's will to upgrade the readiness of its armed forces and prepare them for a wide range of future military operations.

The final factor significantly complicating the warning-response dynamic is the regularity with which Russia has either used force or threatened its use in recent years. Such activities, along with the regularity of large-scale military exercises, leave policymakers and analysts pondering what's next. In this context, understanding intentions becomes especially problematic for providing warning. U.S. and NATO policymakers and the IC do not understand well the potential triggers for action and the decisionmaking process that determines how and where Russia's forces will be committed. Because of the opacity of this process, additional insight and knowledge of Russian decisionmaking will come slowly, at best. Moreover, Russian decisions

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Gordon, "NATO Commander Says He Sees Potent Threat From Russia," *New York Times*, April 2, 2014; Andrew Tilghman, "EUCOM Commander: US May Need to 'Puncture' Russian-Defenses," *DefenseNews*. March 1, 2016.

[11] Adrian Croft, "NATO Commander Plays Down Tension with Russia over Ukraine," *World News*, February 27, 2014.

[12] Hicks et al., 2016, pp. 2–3.

[13] Lukasz Kulesa, "Towards a New Equilibrium: Minimising the Risks of NATO and Russia's New Military Postures," European Leadership Network, Policy Brief, February 8, 2016, pp. 42–44.

[14] Kulesa, 2016, pp. 42–44.

[15] Norberg, 2015. p. 12.

[16] Norberg, 2015, p. 23.

and subsequent preparations can be tailored to counter U.S. and NATO responses. This possibility presents the classical warning dilemma: When warning is successful, the adversary modifies its behavior.[17] If behavioral modifications become known, the event is considered a success; however, they frequently go undetected. In these situations, both policymakers and analysts run the risk of falling prey to the "cry wolf" syndrome, becoming desensitized, or falsely reading adversary intentions.

Potential Areas for Improving Warning

Although warning certainly can be improved, there are no guarantees for success. Some areas for improvement involve IC practices, while others rely on policymaker and commander decisions among the competing priorities that confront IC collectors and analysts. Furthermore, waiting for additional confirmation of Russian intentions may leave little time for policy responses that require building domestic political consensus, generating coalition acceptance, or deploying additional forces.

Generally, the IC's most effective warning will likely be based on its own assessments of Russian leadership intent or indirect reflections of intent, both of which are often ambiguous. The following discussion presents recommendations for improving warning against Russia on NATO's eastern flank.

Rebuild Capacity to Obtain Intelligence About Russia's Targets

Recent changes in the nature of the threat from Russia have made it necessary to rebuild the government's expertise on Russia and to gain additional capacity in areas relevant to warning.[18] Current challenges stem, in part, from shifts in both collection and analytic resources as new priorities have emerged over the past 25 years. Assets that during the Cold War would have been focused on monitoring key political and military trends in Russia have been devoted to other priority areas. The numbers of Russia analysts in the IC has fallen substantially, along with the overall level of expertise and experience. Although the IC is unlikely to need the same numbers of analysts it needed during Cold War, sustained attention will be needed to identify emerging Russian military operational concepts and norms as well as order-of-battle changes. Simultaneously, with Russian forces engaged in eastern Ukraine and Syria, IC analysts must devote significant time to crisis support and monitoring, at the expense of research in areas necessary for enhancing warning. These requirements, coupled with the growing challenge of monitoring and analyzing Russian information operations and indirect-action activities in other parts of Europe, suggest that the IC may need additional capacity to maintain awareness of Russian operations over a wide geographic area.

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[17] McCreary, 1983, pp. 74–75.

[18] John Grady, "EUCOM Emphasis Shifting to Russian Deterrence," *USNI News*, July 14, 2016; U.S. European Command, *U.S. European Command Posture Statement 2016*, February 25, 2016; Garamore, 2015.

In the absence of additional capacity to support its expanding list of tasks, the IC's ability to provide policymakers and commanders with penetrating insight will potentially remain constrained. The shortage of analysts with expertise in areas relevant to key warning issues may slow the IC's efforts to improve warning as new analysts are brought up to speed. These delays, in turn, may limit the IC's ability to provide timely warning of Russian actions that negatively impact U.S. and NATO security. This is particularly true with IC managers being asked to balance increasing requirements for current intelligence (including crisis support) and the need for sustained research efforts that may pull analysts away from immediate needs.

Since analysts appear to have monitored Russian movements and disposition in recent events relatively successfully, despite the difficulty the IC has traditionally experienced with understanding adversary intentions, some might conclude that additional capacity is not needed. This argument ignores the significant transformation Russia's military is now pursuing. Frequent and more-complex exercises are specifically designed to improve RFAF readiness and shorten response times. Mobilization and nonmilitary crisis preparations are also designed to effectively and quickly transition Russia to a war footing. These factors, coupled with an opaque decisionmaking structure and a much more aggressive posture, emphasize the need for innovative strategies to improve warning in an increasingly complex environment.

Finding new ways to gain insight into Russian intentions (either directly or indirectly) will require long-term, sustained research and in-depth analysis. This effort should include rebuilding expertise on historical precedents, legal and regulatory structures, organizational changes, procedural modifications, experimentation, and other military and nonmilitary activities that support Russian wartime transition efforts.

Improved Indicators

The understanding of warning must not devolve simply into a discussion of indicators. Warning entails much more than that, although well-developed sets of indicators can contribute enormously to warning success. Rigorously and systematically building indicator lists helps analysts think through the conceptual models that lie beneath their analysis of how Russia might pursue specific types of operations. The examples cited in this study demonstrate that building quality indicators requires that the IC be capable of collecting and monitoring them on a regular basis, that they are diagnostic for the warning problem they support, and that the IC has the requisite expertise to understand the nuances and differences that indicate changes from steady-state to crisis situations.

Strategies for collecting new indicators will require detailed analysis of activity patterns, technical parameters, and systemic relationships. RFAF modernization efforts and the pace of change in Russia's military make these analyses an increasing challenge. Furthermore, tailored collection focused on key events, such as exercises or operational experiments, requires an understanding of objectives and tasking. Nevertheless, the ability to understand systemic

relationships will permit collectors to identify other means of tracking key indicators and potentially counter denial and deception efforts.

Another key element of the indicator-development process is ensuring that indicators have diagnostic value and are related to some critical function in the peace-to-war transition. Russia's use of no-notice inspections since 2013, along with a heavy forward presence along NATO's eastern flank, has probably made many of the military indicators that would be useful for early warning less important than they once were. This is particularly true as Russia builds readiness in top-echelon units. Even though widespread military preparations will remain necessary large-scale operations, they will require much less time in the future and will probably present a less observable footprint. Furthermore, many out-of-area preparations, such as deployment of air, airborne, and air-defense units, could be undertaken shortly before early operations begin. In fact, a rapid-deployment capability has been a key feature of recent exercises. Russia conducted 11 no-notice inspections in the first half of 2014 that included inspections of up to 65,000 servicemen and deployments that averaged up to 350 km to reach exercise areas.[19] The largest no-notice inspection occurred immediately before Russia's invasion of Crimea and included 150,000 servicemen and significant numbers of tanks, heavy equipment, aircraft, and ships.[20]

While the value of some military indicators may be diminished, other areas may emerge as new possibilities. One of the key functions of annual exercises and no-notice inspections is war preparation. Detailed collection and analysis in both categories of activities could illuminate preparatory functions that must take place at the operational and strategic levels of war. In addition, because the exercises are an important element in training military staffs and political leaders, there may be key procedures and practices that can be identified and monitored. Understanding these processes and any criteria or measures of effectiveness used for evaluating readiness could provide critical nontactical indicators.

In addition to understanding the military dimensions of the Russian exercises, it is necessary to understand important crisis-management elements involving nonmilitary entities. Though these elements may not be useful for developing indicators for small operations (that presumably would not involve foreign intervention or escalation), they may have significant diagnostic value for operations potentially involving action by U.S. or NATO forces. Nonmilitary exercises could indicate essential wartime functions that are focused on ensuring internal stability and supporting key mobilization processes. In addition, they also may provide information on important civil-defense and disaster-preparedness functions.

A final set of indicators worth exploring are those tied to mobilization. Russian laws define mobilization as the process by which the Russian Federation transitions from a peacetime to a wartime posture by ensuring access to necessary logistics and infrastructure and ensuring the

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[19] Norberg, 2015, p. 51.

[20] Norberg, 2015, p. 58.

security of the civilian population.[21] It must be emphasized that mobilization in this context is not limited to military mobilization. Military mobilization is an essential function—and one that entails a plethora of critical functions to manage civil-military relations—but it is not the only element of mobilization. The IC's earlier warning paradigm was focused heavily on monitoring military mobilization. This overreliance led to significant problems and, according to one former NIO-W, contributed to several warning failures.[22] Subsequent research demonstrated that many authoritarian regimes and centrally planned economies "prepare for war by first initiating measures across the spectrum of social, economic, political, and military life that divert resources away from civilian life and into the armed forces."[23] Accordingly, the potential social and economic disruptions caused by war preparations are likely to weigh heavily on foreign decisionmakers' thinking about maintaining social stability. Understanding these nonmilitary indicators will require a wide range of expertise, but they provide improved insight into adversary intent.

Although collection and analysis of these indicators is feasible, the issues involved are less relevant to many intelligence consumers on a day-to-day basis. With limited resources, IC managers will have to consider the relative importance of perceived current intelligence requirements (particularly those not tied directly to decisions or those that simply build situational awareness) as opposed to warning.

Focused Training

In recent years, the IC has developed many analytic training courses that are available to analysts at all agencies. These resources are essential for maintaining a professional and proficient analytic corps. However, two key areas of training, both tied closely to warning, have been cut back greatly. The first is warning training itself. When the Director of National Intelligence decided to disestablish the category of NIO-W in late 2010, the prevailing logic was that warning is a responsibility of all IC managers and analysts. Numerous current and former IC senior analysts and managers did not see this thinking as inherently problematic for warning, as long as analysts were properly trained, so warning training has been reduced significantly.[24] Currently, the vast majority of IC analysts receive only a limited introduction to warning in their core analytic training.[25]

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[21] An example of these laws is Federal Law No. 31-FZ of February 26, 1997, *On Mobilizational Preparations for the Mobilization of the Russian Federation*, February 26, 1997 (with the amendments and additions of July 16, 1998, March 24, December 30, 2001).

[22] Allen, 1998, p. 1.

[23] Allen, 1998, p. 3.

[24] This conclusion is derived from interviews conducted during recent RAND studies on strategic warning.

[25] This conclusion is derived from interviews conducted during recent RAND studies on strategic warning.

Another potential shortfall is in denial and deception training. As noted earlier, a significant number of warning failures have resulted from successful denial and/or deception efforts by an adversary. Denial and deception played at least some role in each of the six events examined in this study. Nevertheless, the IC provides very little training on how to counter adversary denial and deception, and relatively few IC analysts are trained in this area, particularly as it relates to the practice of warning.[26] Denial and deception has been a key part of Soviet and Russian thinking. By failing to address this fundamental area, the IC is likely to face additional challenges to its already stressed warning capabilities.

Build and Leverage Experience and Expertise

Because the number of experienced IC analysts dedicated to studying Russia has declined greatly since the end of the Cold War,[27] this group faces many of the same challenges as other parts of the IC in terms of experience and expertise. To improve warning, the IC should build both experience and expertise in its Russia collection and analytic workforce. Although this will not be a quick fix, it will be necessary to address this complex problem.

More Directed Research

The recommendations outlined here cannot be accomplished without more focus on directed research. To be useful for supporting improvements in warning, research should be focused on immediate issues that will illuminate key problems that Russian political and military leaders believe they will have to address in a crisis or wartime situation. Research on longer time horizons is unlikely to be useful for warning to most, if not all, policymakers, because of their immediate policy and security concerns.

Directed research must be focused on identifying new sources of information and new approaches to understanding Russian planning and decisionmaking. Similarly, the IC should devote additional resources to in-depth collection and analysis focused on critical processes in a range of activities, including mobilization, disaster/crisis response and preparedness, and civil defense. Improvements in this area would be helpful in identifying the types of social, political, and economic processes that are critical for transitioning from peace to war.

Warning and Decisionmaking

The primary focus of this study is the IC's current warning capability and areas in which it might be improved. An additional theme that emerged from the events examined is the warning-response dynamic, particularly as it relates to perceptions about what warning will be able to

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[26] George and Bruce, 2008, pp. 211–212, 344. These themes were raised by senior IC managers and analysts during interviews conducted for other projects on strategic warning.

[27] Miller, 2016.

deliver in the available decision space and time. It is unclear whether additional warning time would have allowed policymakers to develop better, more-effective policy options in many of the events. There was an imbalance in the level of interest and importance that each side (Soviet Union/Russia and the United States/NATO) assigned to the situations being monitored. As a consequence, the Soviets and Russians were much more willing to take action than the United States and NATO were to respond to it. In this sense, the policy options were limited.

In some examples, the question of force posture was also an issue. The United States and NATO would have had to significantly increase force posture prior to responding in several of these instances, so the Soviet or Russian action would have been well under way (possibly completed) and considerably more difficult to address. Recent analyses and war games have highlighted a similar situation on NATO's eastern flank, where Russian forces are forward-deployed and overmatch their NATO adversaries. Russian decisionmakers are also in a position to make decisions that are best suited to a given situation. If their actions are discovered, they have the ability to pull back and wait for another day. If conditions are favorable, Russian forces could rapidly achieve their objectives, well before NATO could respond in a meaningful manner. Even under the best conditions, improved warning will not improve this reality on the ground. Additionally, it is unlikely that earlier warning—which is typically more ambiguous—would do little to convince allied decisionmakers who are reluctant to take action in the first place. It may, in fact, complicate allied buy-in because of its ambiguity.

Warning is essential to the time policymakers have to make decisions and the quality of those decisions. Less time and poor-quality information are likely to have a direct, negative impact on crisis decisions. Areas where policymakers can help sharpen the IC's focus, clarify what they want from intelligence, and define their priorities and concerns are described briefly below.

Outline Priorities

Policymakers can help improve warning by clarifying priorities and providing insight into their policy initiatives and concerns. Warning on NATO's eastern flank will remain a high priority, but in the midst of other concerns about Russia's next moves, this priority may lag as policymakers demand more information on other problems. Although the IC cannot dedicate its resources to only a limited number of issues—it must monitor a much wider range of activities—analytic resources that might otherwise be focused on covering lower-priority issues should be devoted to identifying processes, functions, and new indicators for identifying systemic change.

In general, circumstances requiring rapid responses that may involve deploying military forces—including an attack in the Baltics—should have highest warning priority. Other responses that are more likely to lead to punitive measures, such as sanctions or support to opposition groups, may not require the same level of early warning. In fact, they may require a lengthy period for formulating and then gaining approval of a specific policy choice.

Realistic Expectations

If policy options are limited from the outset, there is little that advanced warning can do to mitigate the effects of an adversary's actions. To get the kind of warning they want from the IC, policymakers must make sure they have realistic expectations about what the IC is capable of providing. As emphasized throughout this study, understanding adversary intent has been a constant challenge for the IC. The IC has been taken to task for not providing early warning in several situations in which the final Soviet or Russian COA was probably not decided until very late in the crisis. This problem was most significant where geographic proximity and force posture permitted the Soviets to make a late decision (i.e., in the Soviet invasions of Czechoslovakia and Afghanistan and the Russian invasion of Crimea). A similar situation now confronts the IC and policymakers with respect to NATO's eastern flank. The RFAF's proximity and already significant force posture provide Russia with a range of options that will permit its decisionmakers to employ forces on relatively short notice or when opportunities present themselves.

When IC analysts have information available that allows them to provide early warning, the information is frequently ambiguous and even contradictory. This is particularly the case when military indicators are not the primary evidence. Issues tied to Russian decisionmaking are generally fragmentary and reflect the IC's limited understanding of adversary decisionmaking. Indicators tied to mobilization and other nonmilitary preparations could also explain a range of activities other than large-scale military activity. Russian indirect action is a primary example. Indirect activities are ongoing in several areas today. In Georgia, they were under way for years prior to the onset of the operation, and they continued after it concluded. However, detecting and attributing these activities is also a major challenge. Warning based on indicators of these types of action will generally have a high level of ambiguity, and waiting for improved certainty will increase risk for U.S. and NATO policymakers in many situations.

Realistic Options

The final element of the warning-response dynamic is ensuring that realistic options are considered and available prior to an event. In several of the examples discussed in this study, the range of potential responses was limited, for a variety of reasons. Earlier warning in these situations may have done little to provide more options. As a result, it is imperative that for high-priority interests that involve significant threat, policymakers must consider the available options ahead of time and plan accordingly.

5. Conclusions

Russian forces have conducted three major military operations over the past nine years and are in the midst of a major modernization effort. Accordingly, the demand for intelligence on Russia continues to grow, while policymakers and analysts discuss a wide range of potential scenarios for the future. These scenarios range from Russian meddling in the affairs of former Soviet states with limited Western ties to major operations against former Soviet states that are now NATO members.[1] The pace at which the IC is being forced to work in this region is unparalleled since the end of the Cold War. Russia's emergence as a national security priority presents a host of new challenges to meet multiple planning and policy requirements throughout the U.S. government.

Achieving timely warning has proven extremely difficult, for a variety of reasons, in large part because of a lack of insight into Russian leadership intentions. This shortfall is compounded by Russia's geographic proximity to many of the areas where its forces have been committed or may be committed in the future. Other factors, such as denial and deception, have also played a significant role in preventing effective warning. With other high-priority issues competing for policymaker attention and intelligence resources, the current warning posture vis-à-vis Russia arguably could be the most challenging problem facing the IC today.

The themes discussed in this report involve several cross-cutting issues that have challenged the IC, regardless of resources or experience. These themes suggest that persistent problems, including Russian leadership intent, place limits on what the IC will be able to warn about on a consistent basis. The themes also demonstrate that while developing and monitoring indicators are important parts of the warning process, they have not always led to success, and they provide no guarantee of improved warning in the future. In each of the events discussed in this study, the IC was aware of indicator-based activities just prior to hostilities. When it came down to a final assessment, however, the IC misjudged or lacked insight into Soviet or Russian willingness to undertake the courses of action the leaders chose. In each instance, the IC's judgments were reasonable. In Afghanistan, archival records from Soviet Politburo meetings showed that some members argued against an invasion and raised many of the same points the IC used in concluding that the Soviets would not invade. In the end, these arguments did not prevail, and Soviet forces invaded.

[1] The variety of reporting on future scenarios involving Russia is discussed in many studies, including Stephen Blank, "Why Does Putin Surprise Us Again and Again?" Atlantic Council, March 7, 2016; "Determining Putin's Next Target," *Stratfor*, February 22, 2016; Bridget Kendall, "What Next for President Putin?" *BBC News*, December 31, 2015; Luke Coffey, "Predicting Putin's Next Move," *Al Jazeera*, November 30, 2015; Marvin Kalb, "Putin's Deceptive Pause: What Are Russia's Next Steps in Ukraine?" Brookings Institution, September 1, 2015; Steven L. Hall, "Why the West Should Pay More Attention to Moldova," *Stratfor*, February 20, 2016.

Despite the recurring challenges, warning can be improved. The recommendations presented in Chapter 4 are an important start. By developing the IC's expertise and analytic capacity, IC analysts and collectors could more effectively tackle the toughest intelligence needs associated with warning. Improved analytic capacity and information would enable the type of in-depth research that is currently so challenging for the IC because of its current personnel shortages and increasing workload. Achieving the needed improvements will not be a short-term endeavor. Success requires time and sustained focus, even when demands for current intelligence routinely emerge. With limited IC resources currently dedicated to Russia, most collection and analysis will focus on issues demanding immediate attention. This translates into a day-to-day emphasis on producing current intelligence at the expense of the types of in-depth research necessary for improved warning. Senior-leader statements and the need to deal with Russia's reprioritization indicate that more people and capabilities likely will become available. DoD's emerging strategic initiative on Russia is designed, in part, to help rebuild expertise in the IC and the department.[2] Over the near to mid-term, other programs may introduce additional projects that will support decisionmakers' warning needs.

Rededication of Cold War–level resources to the Russia problem is unlikely, particularly in light of the multitude of competing priorities. It also is not necessary, with today's advanced collection technologies and information systems and tools supporting analysts. While Russia's recent actions may threaten U.S. and NATO interests, they do not constitute the same level of threat the Soviet Union posed, from a variety of perspectives. Nevertheless, analytic effort should be dedicated to research to improve the IC's current indicators, develop better understanding of key civil-military processes and functions necessary for transitioning to war, and rebuild the experience and expertise on Russia the IC has lost over the past two decades. Clearly, these changes would not in themselves solve all the warning problems. They could, however, put an already stressed IC in a position where its prospects for successfully warning policymakers and commanders will improve with time.

Improved warning will do little without an enhanced U.S. and NATO forward presence. This is particularly true regarding NATO's eastern flank. Russian forces possess significant advantages, and the time between a Russian decision and the beginning of operations could be short—as little as two weeks or less. With Russia's efforts to improve the speed with which it can mobilize and deploy its forces, these timelines are likely to become even shorter in the future. In areas where there is an already overwhelming Russian advantage, increased warning time will be highly unlikely, and marginal warning improvements will offer little value to policymakers and commanders. Bolstering U.S. and NATO posture will remain the best option for deterring future Russian aggression in the Baltics.

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[2] John Grady, "EUCOM Emphasis Shifting to Russian Deterrence," *USNI News*, July 14, 2016; U.S. European Command, 2016.

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Since 2008, Russia's military has embarked on an extensive modernization program designed to overcome shortfalls in readiness, competence, sustainability, and deployability. These and changes in logistics and operational capability have raised concerns about the Intelligence Community's (IC's) ability to warn of future Russian aggression. Achieving timely warning has proven extremely difficult, for a variety of reasons, in large part because of a lack of insight into Russian leadership intentions. This study examines six Soviet and Russian events that occurred in the past 50 years to highlight themes that pertain to current concerns about aggression on NATO's eastern flank. It addresses developments that have shaped warning since the fall of the Soviet Union and the beginning of Russia's military modernization efforts, including a decline in Russia's priority for U.S. policymakers and the IC effort devoted to it. It identifies continuity in Russian operational practices and IC challenges and distills the findings into recommendations for improving warning, including increasing analytic effort to improve the IC's current indicators, developing better understanding of key civil-military processes and functions necessary for transitioning to war, and rebuilding the experience and expertise on Russia the IC has lost over the past two decades.



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DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, MARCH 13, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

UNITED STATES CENTRAL COMMAND AND UNITED STATES AFRICA COMMAND

The committee met, pursuant to notice, at 9:29 a.m. in Room SH–216, Hart Senate Office Building, Senator James M. Inhofe, presiding.

Committee members present: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Graham, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Our meeting will come to order.

The committee today meets to receive testimonies on the posture of the United States Central and African Commands.

We welcome our witnesses, General Votel and General Waldhauser, and thank each one of you for your great service.

In advance of this hearing, Chairman McCain asked that I submit a statement for the record on his behalf. I will quote that statement.

[The information referred to follows:]

The new National Defense Strategy provides a helpful framework for prioritizing the multitude of national security threats we face. As we turn our attention to the central challenge of great power competition, the National Defense Strategy challenges us to think about our efforts in the Middle East in new and different ways. With all of the recent success in the fight against ISIS, we must work to consolidate our gains and move forward with a coherent regional strategy to ensure security and stability.

The current administration has succeeded in turning the tide in the fight against ISIS. The so-called caliphate that once threatened to engulf the Middle East has been reduced to a fraction of its former territory. But our hard-fought tactical victories cannot alone secure American interests in the region, and a single-minded focus on defeating ISIS falls far short of the strategic clarity needed to do so. We need a coherent strategy to account for all of the complexities of this difficult region and demonstrate American leadership.

With a civil war raging in Syria and Assad continuing to massacre his own people, two successive United States administrations have failed to do anything meaningful to end the slaughter. This administration is more than one month late in de-

livering a strategy for Syria, which Congress required in the Fiscal Year 2018 National Defense Authorization Act. With the Assad regime poised to retake the last pockets of resistance in Syria, we cannot delay any longer in developing a strategy to change course.

In the absence of American leadership, others have not hesitated to fill the void. Both Russian and Iranian influence are only expanding in the Middle East—much to the detriment of our interests, our values, and our partners. It is not that the United States is not active in the region, it is that our activities are unmoored from strategy.

From Iraq to Afghanistan and Yemen to Niger, CENTCOM and AFRICOM face serious questions about the United States role in ensuring stability and supporting partner forces. Without broader strategic coherence, we cannot hope to achieve our interests and secure peace and prosperity across these vital regions.

I hope this hearing can shed light on what policies, authorities, or resources our commanders on the ground need to accomplish that mission—particularly in light of a National Defense Strategy that identifies great power competition, not terrorism, as the primary concern in U.S. national security. In that context, we must be diligent in asking how CENTCOM and AFRICOM can pursue their counterterrorism missions with greater efficiency without compromising efficacy.

"As we turn our attention to the central challenge of great power competition, the National Defense Strategy [NDS] challenged us to think about our efforts in the Middle East in new and different ways. With all of the recent success in the fight against ISIS [Islamic State of Iraq and Syria], we must work to consolidate our gains and move forward with a coherent regional strategy to ensure security and stability."

This committee looks forward to working with this year's National Defense Authorization Act [NDAA] to provide the policies and authorities needed to adjust to this new approach both in the Middle East and in Africa, where the threat of violent extremism is in increasing dramatically.

For CENTCOM [United States Central Command], over the past year, we have seen remarkable progress in the fight against ISIS. Military victories in Mosul and Raqqah and beyond have helped dismantle the caliphate ISIS once claimed in the Middle East.

At the same time, significant challenges remain in the region. The Syrian civil war rages on. Iran continues to grow its influence and fund its proxies. According to the region, we face serious questions about the Kurds, many of whom have fought by our side valiantly.

For AFRICOM [United States Africa Command], I will make one statement that I think is significant for us to keep in mind for the purpose of this hearing.

General Waldhauser, it is my understanding the investigation into the October 2017 ambush in Niger by ISIS-affiliated fighters that killed four United States soldiers is completed. I understand it is now pending review by the Chairman of the Joint Chiefs of Staff, General Dunford, and the Secretary of Defense, Jim Mattis. After his approval, AFRICOM will immediately offer a brief to the families of the four soldiers if they desire prior to any in-depth briefing to Congress. Obviously, we want the families to have an opportunity know what happened to their loved ones.

Accordingly, I understand that you are not able to comment on the investigation's results during this posture hearing. At the conclusion of the briefs to the families, I know you will be providing us with a thorough briefing of the investigation's findings and recommendations.

Now, we want to talk about Africa and AFRICOM. Our troops have an important mission there to train and assist regional partners so that they will be capable of handling security threats before they become global crises. Our engagements in Africa are critical not only to regional stability but to our own national security, but it lacks dedicated troops, resources, sufficient basing, and strategic access.

Senator Reed?

STATEMENT OF SENATOR JACK REED

Senator REED. Well, thank you very much, Mr. Chairman.

I want to thank our witnesses for appearing today, for also your service and the service of the men and women you command. Thank you very much and thank them, please.

You are leading your commands in very challenging times. We are in the 16th year of military engagement in Afghanistan, for example. Early last year, General Nicholson, Commander of United States Forces Afghanistan, testified we were facing a stalemate. Since that time, the [Trump] administration has announced a new South Asian strategy, articulated a negotiated settlement as the desired end state, moved additional forces into the theater to support the military elements of the strategy, and curtailed security assistance to Pakistan.

Despite these shifts, 2017 continued to be plagued by widespread violence and instability in Afghanistan as the Taliban expanded their territorial control and conducted a number of large-scale attacks against military and civilian targets.

In addition, ISIS–Khorasan remains resilient despite significant pressure.

While the administration has clearly laid out a military strategy, battlefield victories are hollow without political and economic progress, both of which seem stalled in Afghanistan.

However, the Trump administration has yet to articulate the political governance or economic aspects of the strategy, much less the associated staffing and resources that will be required to implement it.

General Votel, I am interested in your assessment of the situation in Afghanistan. I am sure all of my colleagues are also.

In Iraq and Syria, the destruction of the so-called physical caliphate previously enjoyed by ISIS is a significant victory, and I commend the administration and your leadership and your colleagues too for this United States-led international coalition. Our Iraq and Syria partners on the ground have done so much. However, ISIS is not defeated and will remain a threat for the foreseeable future.

Additionally, the underlying issues that gave rise to ISIS in the first place remain unaddressed. We need strong United States diplomatic leadership to help bring about the necessary political accommodations that will give Sunni communities a stake in their future and to bring the international community together to assist communities recovering from ISIS.

As some experts have stated, the seeds of the next insurgency are sown in the rubble of Mosul and Raqqah. In Iraq alone, the cost of reconstruction is expected to be at least $88 billion, and the

international community has pledged less than one-third of that amount.

I am deeply concerned that the administration's marginalization of our diplomatic corps undermines our ability to stabilize the areas once held by ISIS, as well as the broader region. It is notable that across the CENTCOM and AFRICOM areas of responsibility, a number of ambassadorial posts remain vacant, most notably in Jordan and Somalia, where I recently visited, but also in Saudi Arabia, Qatar, Libya, and Egypt. This is not a question of congressional inaction. No nominations have been forthcoming, and I am sure our colleagues, all of them, would rapidly move to consider nominees for these very important positions.

Military power alone will not be enough to address the national security challenges we face in these complicated regions in any enduring way. We must have the people in place to help ensure our long-term strategic objectives are met.

On Iran, the President risks creating a foreign policy crisis by threatening to withdraw from the Joint Comprehensive Plan of Action, or JCPOA. By all accounts, the JCPOA is working as intended, and Iran is verifiably meeting its commitments under the agreement. Let there be no doubt. Iran continues to be a state sponsor of terror and abuser of human rights. Iran continues to destabilize the region through its development of ballistic missiles and support for proxies in Iraq, Syria, Lebanon, Yemen, and elsewhere. The JCPOA was not intended to address all of Iran's bad behavior, just the nuclear aspect. If Iran behaves this way without a nuclear weapon, imagine how much worse it would be with a nuclear-armed force.

Withdrawing from the JCPOA would be a devastating blow not only for the Middle East, but also for our efforts diplomatically with North Korea and for any future diplomatic efforts to constrain aggressive behavior by our adversaries.

General Votel, I am interested in hearing if you, like Secretary Mattis and General Dunford, believe that remaining in the deal is in the best interest of the nation.

In Africa, the importance of relationships is paramount as we seek to engage by, with, and through our partners in the furtherance of our shared security goals. I recently traveled to East Africa where I saw firsthand the ongoing efforts to disrupt violent extremists and build capacity with critical partners in places like Djibouti and Somalia. I also saw the challenges from competitors, such as China and Russia, who are actively seeking investments and involvement across the continent.

Despite some battlefield success against groups like Al Shabaab, Boko Haram, and ISIS affiliates, many governments in the region have struggled to translate security gains into durable outcomes.

As we turn our attention to the great power competition articulated by the National Defense Strategy, we must be mindful not to focus exclusively on these issues at the expense of other threats such as terrorist organizations, rogue regimes, and other non-state actors and criminal organizations, issues that are unfortunately present in both of your commands.

Thank you, Mr. Chairman.

Thank you, gentlemen, for your service.

Senator INHOFE. Thank you, Senator Reed.

We will now have opening statements by our two guests, and your entire statement will be made a part of the record. General Votel?

STATEMENT OF GENERAL JOSEPH L. VOTEL, USA, COMMANDER, UNITED STATES CENTRAL COMMAND

General VOTEL. Senator Inhofe, Ranking Member Reed, distinguished members of the committee, good morning and thank you for the opportunity to appear today to discuss the current posture and state of readiness of the United States Central Command.

I am pleased to be here today with my fellow combatant commander and fellow Minnesotan, General Tom Waldhauser of the United States Africa Command.

I come before you today on behalf of over 80,000 members of the command, U.S. military, civilians, and coalition members from 71 nations. In the most complex area of the globe, they serve and sacrifice on a daily basis, in many cases for the benefit of not only American strategic interests but also the world's. Our people are the very best at what they do, and they and especially their families deserve our admiration and gratitude. It is my sincere honor to lead and be a member of such a fine team and dedicated professionals.

Since I last appeared before the committee last year, we have made considerable military progress across the region. However, as we consolidate our gains in places like Iraq, Syria, Lebanon, and Yemen, we remain clear-eyed about the challenges that the region continues to present. In the past year, we have achieved incredible success against ISIS in both Iraq and Syria. The Iraqi Security Forces and the Syrian Democratic Forces are operating at their most effective levels and have liberated over 98 percent of the territory previously held by ISIS. The destruction of the ISIS physical caliphate is within our grasp and thousands of displaced persons are returning home and beginning the long task of rebuilding. Now we must consolidate gains by investing in the security forces, relationships, and capabilities that will hold the territory and keep ISIS from returning.

Based upon that progress, CENTCOM is conducting an operational alignment and rebalancing effort to achieve three goals.

The first goal is to complete major combat operations in Iraq and Syria to bring the Defeat ISIS campaign to a responsible close. Military success in the campaign presents us an opportunity to reposition forces from Iraq and Syria to Afghanistan in a manner that keeps the pressure on ISIS but also sets us up to break the stalemate in Afghanistan. We retain sufficient capability to continue our efforts against ISIS despite the increasingly complex situation across Syria and especially in the northwest province of Afrin. Our partners on the ground in Syria have gotten us a long way in Syria toward our objectives, and we must stick with them through the completion of this fight.

In Iraq, the Iraqi Security Forces are rapidly consolidating gains and preparing to support elections later this spring.

The second goal is to prioritize the implementation of the South Asia strategy in Afghanistan, reaffirming our enduring commit-

ment to Afghanistan by reinforcing the two complementary military missions: the NATO-led [North Atlantic Treaty Organization] train, advise, and assist mission, and the United States counterterrorism mission. With our support, the Afghan National Defense and Security Forces are well postured to begin operations to seize the initiative, to expand population control and secure credible elections.

Part and parcel of this effort is our regionalized approach to engage all countries with a stake in Afghanistan's stability, especially Pakistan where we seek a more productive and trustful relationship that benefits our mutual objectives in the region.

The third goal is to ensure that we have aligned our military efforts with our broader interagency and international activities to neutralize, counterbalance, and shape the destabilizing impact of Iran. Make no mistake. Iran's malign activities across the region pose the long-term threat to stability in this part of the world.

The recently published National Defense Strategy rightly identifies the resurgence of great power competition as our principal national security challenge, and we see the effects of that competition throughout the region. Russia's support of the Assad regime has not only propped him up but has also added complexity to the Defeat ISIS campaign. Moscow plays both arsonist and fire fighter, fueling tensions among the Syrian regime, Iran, Turkey, the Syrian Democratic Forces, the United States, and other coalition partners, then serving as a supposed arbiter to resolve disputes. Today, Russia's manipulative behavior has placed our campaign progress at risk with activities that are not focused on the defeat of ISIS, but rather preserving their influence and control over the outcome of the situation.

China is pursuing long-term, steady economic growth in the region through its One Belt, One Road policy, but it is also improving military posture and force projection by connecting ports such as Gwadar in Pakistan with its first overseas military base in Djibouti, adjacent to the critical Bab al Mandeb Strait.

Both China and Russia not only seek to fill in perceived gaps in United States influence with increasing defense cooperation and sales of their equipment to regional partners, but they are also cultivating multi-dimensional ties to Iran.

Against this backdrop of increasing great power interaction are the enduring issues of the region: social, economic, and political challenges, high unemployment, falling oil prices, a youth bulge, large numbers of refugees, and longstanding border conflicts. We in CENTCOM stand ready with all of our partners to defend U.S. interests against these and other threats. Our strategic approach of preparing the environment, pursuing opportunities, and prevailing wherever we can is working. We are postured for purpose, proactive in pursuing opportunities, and resolved to win.

I would like to close by sharing three dynamics that we assess are essential to prevailing in this region.

First, in the conduct of our campaigns in Iraq, Syria, Afghanistan, Yemen, Lebanon, and Egypt, we have adopted a by, with, and through approach that places a heavy reliance on indigenous partner forces. While this approach does present its own challenges and can be more time consuming, it importantly provides local solutions

to local problems. This approach is not without risk, as we are seeing unfold in northern Syria today, but it is proving very effective and will pay significant dividends going forward.

Second, successful pursuit of U.S. objectives in this region comes only from an integrated approach aligned with interorganizational partners. Defense of the nation is a team sport. This applies not just within the command but with our fellow combatant commands, the central region's 18 country teams, other departments, agencies, and organizations of the U.S. Government and, most importantly, our coalition partners who have provided unwavering support for nearly two decades of persistent conflict. As the National Defense Strategy captures clearly, strengthening existing relationships and building new ones will be key to our future success.

Finally, we could not do what we do on a daily basis without the support of Congress and, by extension, the American people. We sincerely appreciate this committee's continued strong support for our operations, authorities, and resources and especially for your support to the services, SOCOM [United States Special Operations Command], and the other defense agencies that we rely upon for our military wherewithal. Your support will remain important as we contend with what potentially are generational struggles to defend our Homeland from the threats outlined in our National Defense Strategy.

Thank you again, and I look forward to answering your questions.

[The prepared statement of General Votel follows:]

PREPARED STATEMENT BY GENERAL JOSEPH L. VOTEL

INTRODUCTION

Last month I walked down the main street of Raqqah, the former capital of the brutal Islamic State in Iraq and Syria (ISIS). Amidst the mountains of rubble, reminiscent of European cities in World War II, vegetable sellers and falafel carts have set up shop, Raqqawi citizens are coordinating reconstruction efforts, and children are preparing to return to school—evidence of the indomitable spirit of the Syrian population.

Our Global Coalition to Defeat ISIS and partners, in particular the Iraqi Security Forces (ISF) and Syrian Democratic Forces (SDF), have made extraordinary progress for over 3 years, liberating Mosul and Raqqah—the former capitals of ISIS's self-proclaimed "caliphate." Now, more than 98 percent of the territory in Iraq and Syria formerly held by ISIS is no longer under their control. In Afghanistan, our Operation Enduring Freedom Coalition of 39 countries is supporting an increasingly capable Afghan National Defense and Security Forces (ANDSF) as they destroy Taliban and ISIS safe havens, remove terrorists from the battlefield, and establish the conditions for greater Afghan governmental control. United States Navy vessels and the Combined Maritime Force (CMF) patrol the Gulf and Red Sea, ensuring the free flow of commerce through these strategic waterways. Every day, our military and civilian personnel, forward deployed across the region, conduct training exercises and strengthen our partners' abilities to defend themselves from external threats and challenge violent extremism within their borders. These activities, paired with robust diplomatic efforts from our country teams also help balance against Iran's destabilizing influence in the region.

Our success over the last year is largely due to the unyielding support of our allies, tremendous cooperation with our interagency partners, provision of additional authorities, and the continued faith of the American people in our military. However, despite the great strides we have made, there is much work left to do. The challenges in the region are many: terrorism, violent conflicts, massive refugee populations, economic stagnation, social upheaval, great power competition, nuclear and ballistic missile threats, humanitarian crises, and radical violent ideologies to name a few. As our country begins to shift focus to threats in other parts of the world,

the CENTCOM region remains vital to United States' security and economic interests. We will continue to ensure our nation's resources are responsibly employed to protect the American people from terror, promote American centers of trade and prosperity, and preserve peace through strength to deter future conflicts.

CENTCOM'S CHALLENGING ENVIRONMENT

The CENTCOM area of responsibility stretches from northeast Africa, across the Middle East, to Central and South Asia. The twenty countries within this vast region confront profound social, economic, and political upheaval while simultaneously facing grave security challenges in the form of widespread conflict, expansionist regional powers, violent extremist organizations (VEOs), and destabilizing behavior from outside actors. The enduring tension between the nuclear powers of India and Pakistan remains unreconciled while fractured states like Yemen and Syria are wrestling with enormous humanitarian concerns. The generational Israeli-Palestinian conflict simmers incessantly below the surface and complicates partnerships and coordination. Iran, Russia, and China are increasingly competing to be the partner of choice—militarily, politically, and economically—with United States allies. Turmoil in the Central Region seldom remains contained, and regional problems quickly become global as they bleed across Combatant Command seams into Africa, Europe, Asia, and threaten the United States.

Humanitarian Crises. Years of conflict in Iraq, Syria, Afghanistan, and Yemen have caused large-scale humanitarian crises, created havens for extremism, blurred national borders, and provided Iran and Russia opportunities to expand their influence in the region. Millions of refugees stress Middle Eastern and European countries. The government of Iraq, in partnership with the UN, has facilitated the return of millions of Internally Displaced Persons (IDPs), but sustainable returns are contingent on successful security and stability efforts. In Syria, the return of displaced persons has started but the vast majority cannot safely return to their homes until fighting has ended, IDPs feel free from Syrian regime reprisals, and Explosive Remnants of War (ERW) are cleared from their roads and homes. Yemen is plagued by cholera and malnutrition, with nearly 80 percent of the population requiring urgent humanitarian assistance.

Economic Uncertainty. Economic prospects across the region remain hampered by poor economic policies and corruption, which are compounded by inadequate education and health services. This has led to stagnant economies marked by inflation, low wages, and high unemployment. Many economies in the CENTCOM region depend on oil and gas revenues, but low oil prices have challenged governments' abilities to balance fiscal considerations with social contracts. Large state-owned sectors and bloated civil service departments are a drag on economic growth and limit opportunities for a burgeoning youth population.

Corruption inhibits reform and stabilization efforts and undermines the population's confidence in its government. Unfortunately, corruption in the Central Region is at historically high levels; according to Transparency International Corruption Index, 90 percent of countries in the Middle East score a failing grade, and CENTCOM includes some of the most corrupt countries in the world—Syria, Yemen, and Iraq. President Ghani is challenging persistent corruption in Afghanistan by putting reforms in motion to fight corruption in the military and government. Iraqi Prime Minister Abadi is working with the World Bank and the International Monetary Fund to implement an ambitious reform program, but the challenges are daunting. Some of the countries in the region are working to address these economic challenges; Saudi Arabia's Vision 2030 program, Egypt's ambitious macroeconomic reforms, and Jordan's concerted efforts to boost GDP growth rates and reduce unemployment are a few examples.

Violent Extremism. The violent extremist ideologies of ISIS, al Qaeda (AQ) and other VEOs remain a threat to the United States and our allies and partners, not just in the CENTCOM region but worldwide. Although ISIS has steadily lost control over physical territory and no longer controls any major population centers in Iraq or Syria, Sunni populations remain vulnerable to identity-based recruitment into VEOs. Violent extremists have utilized online forums to spread violent interpretations of Islam to audiences across the globe. The impressionable youth in this tumultuous region, seeking community and justice, are highly susceptible to extremists' teachings; consequently, a new generation of radicalized followers could become online citizens of a "virtual caliphate," dedicated to the struggle against the West.

Both ISIS and AQ are resilient and have proven capable of projecting propaganda and inspiring attacks throughout the region and outside of the Middle East. In Egypt, ISIS has expanded its reach into the mainland and carried out mass-casualty attacks. ISIS–Khorasan (ISIS–K) continues to orchestrate high-profile attacks in Af-

ghanistan. Al Qaeda in the Arabian Peninsula (AQAP) continues to plan attacks on the Homeland from the ungoverned spaces in Yemen.

Proxy Warfare. The Central Region has a long history of proxy warfare, violent militias, and irregular forces operating in the "gray zone"—military competition short of war. Iran has extended its tentacles across the region through numerous proxies, including Lebanese Hizballah operating in multiple countries, hardline Iranian-backed Shiite Militia Groups (SMGs) in Iraq and Syria, and Iranian support has enabled the Houthis. The result is prolonging the civil war in Yemen, threatening Saudi Arabia and the UAE, and risking expansion of Yemen's civil war into a regional conflict. Iran uses its proxies to secure supply lines for malign activities and influence neighboring governments. Militants operating out of remote areas in Pakistan threaten Afghanistan and India.

Nuclear/Ballistic Missile Proliferation. Regional conflicts and power imbalances drive nations to seek and acquire nuclear weapons and extend ballistic missile capabilities to secure their influence. As an example, Iran continues to develop advanced ballistic missile capabilities and also transfer them to the Houthis and to its Hizballah proxies. This will enable them to strike United States partners and allies, and the possibility Tehran will reinvigorate its nuclear program in the out-years of the Joint Comprehensive Plan of Action (JCPOA) remains a potential risk. Nuclear proliferation, combined with proxy warfare, increases opportunities for miscalculation and generates a serious threat to the region and the United States.

Regional Competitors. Iran remains the major threat to United States interests and partnerships in the Central Region. The competition between Iran and Saudi Arabia for influence in the region exacerbates multiple security dilemmas throughout the Middle East—from Iran's support of Houthis in Yemen, to Riyadh's attempt to diminish Hizballah's authority in Lebanon. Iran is also working through proxies and friendly political allies in Iraq, Syria, and Lebanon to establish an arc of influence, or "Shiite Crescent" across the Middle East. As we navigate the many challenges and relationships in our region, we partially view them through the lens of countering Iran and diminishing malign influence.

We must also compete with Russia and China as they vie for access and influence in the Central Region. Russia's presence in Syria established Moscow as a long-term player in the region, and the Kremlin is using the conflict in Syria to test and exercise new weapons and tactics, often with little regard for collateral damage or civilian casualties. An increase in Russian surface-to-air missile systems in the region threatens our access and ability to dominate the airspace.

On the diplomatic front, Moscow is playing the role of arsonist and firefighter—fueling the conflict in Syria between the Syrian Regime, YPG, and Turkey, then claiming to serve as an arbiter to resolve the dispute. Moscow continues to advocate for alternate diplomatic initiatives to Western-led political negotiations in Syria and Afghan-led peace processes in Afghanistan, attempting to thwart the UN's role and limit the advance of American influence. Russia's insistence on a separate Syrian political peace process at Astana and Sochi detracts from the internationally-sanctioned UN talks in Geneva. In Afghanistan, Moscow has exaggerated the presence of the ISIS–K threat, and while the Coalition and the Afghans are the only forces actively fighting ISIS there, Russia has used familiar propaganda techniques to brand ISIS's presence as a United States/NATO failure.

Russia is also trying to cultivate multi-dimensional ties to Iran. Though historic rivals, Moscow and Tehran share interests across the region, including an overarching desire to sideline, if not expel, the United States from the region. Russia and Iran are both trying to bolster a brutal regime in Syria, limit United States military influence in Iraq and Afghanistan, and fracture the longstanding United States-Turkey strategic partnership.

Russia also maintains significant influence in Central Asia, where the countries of the former-Soviet Union rely on Russia to varying degrees for their economic and security needs. This is problematic as Russia's efforts could limit United States engagement options and provide Moscow additional levers of influence, particularly as NATO forces deployed in Afghanistan are dependent on Central Asian partners for logistical support. Since 2014, Russia has increased Eurasian integration efforts to reassert Moscow's dominant influence along the periphery or buffer zone.

Likewise, an increasingly assertive China is testing Russia's dominance in the economic and security arenas of Central Asia but also posing challenges to United States influence. China seeks to capitalize on regional concerns over what it perceives as waning United States influence and support. Toward this end, Beijing is building and strengthening trade, infrastructure, defense, and political relationships across the Middle East, Central and South Asia.

China is pursuing long-term, steady economic growth that bolsters its international influence and access to energy resources. Its Belt and Road Initiative (BRI),

which includes the China-Pakistan Economic Corridor (CPEC), could serve as a stabilizing, profit-generating project in the region, but it could also improve China's military posture. This collection of infrastructure projects already provides China with access to Gwadar Port in Pakistan, which is operated through a Chinese-Pakistani agreement and has the potential to increase China's strategic presence in the Indian Ocean. China also recently established its first overseas military base adjacent to the Bab al Mandeb (BAM) in Djibouti. While Beijing claims both locations support peacekeeping and humanitarian operations, the new military base and port allow China to project forces more permanently within the region and influence strategically valuable trade waterways.

China also seeks to increase its economic and diplomatic cooperation with Iran. The lifting of UN sanctions under the Joint Comprehensive Plan of Action (JCPOA) opened the path for Iran to resume membership application to the Shanghai Cooperation Organization, a Eurasian political, economic, and security organization. This, along with the existing BRI cooperation between the two nations, increases China's ties to Iran.

China considers its relationship with the GCC states critical for its current economic needs. The Gulf States provide approximately one-third of China's oil, and Qatar is its single largest supplier of natural gas. Like Russia, China has sought to arbitrate some conflicts in the region, offering to mediate between Saudi Arabia and Iran. While China will continue to develop its relationships with nations in the Middle East, Beijing will likely maintain its stance of avoiding a major role in ongoing conflicts.

North Korea plays a relatively minor role in the Central Region, but its potential export of ballistic missile and nuclear technology remains an area of concern. For decades, North Korea widely proliferated ballistic missile expertise and materials to a number of actors including Iran and Syria. North Korea also exports cheap labor to various Middle Eastern countries; remittances from these laborers are a significant source of revenue for North Korea, despite the State Department's efforts to persuade our partners to expel these workers.

PREPARE—PURSUE—PREVAIL

CENTCOM's mission is to direct and enable military operations and activities with allies and partners to increase regional security and stability in support of enduring U.S. interests. We aim to accomplish this mission through our strategic approach of "Prepare, Pursue, Prevail." This approach aligns with the recently published National Defense Strategy (NDS), which directs us to "Compete, deter, and win in conflict and reinforce all levers of national power from sustainable positions of military advantage." It also aligns with the POTUS-approved strategies for Iraq and Iran. These strategies look to consolidate gains achieved through defeating ISIS, while neutralizing and countering Iran's destabilizing influence, and ensuring a stable Iraq does not align with Iran and remains a productive strategic United States partner.

Preparing in advance of crises creates decision space for leaders and allows for the responsible and effective employment of resources and forces. Effective preparation enables CENTCOM to compete with the other major actors in the region through strengthening alliances and partnerships. *Pursuing* opportunities ensures we seize and maintain the initiative as we meet each of the challenges in our complex region. We also retain the flexibility to effectively deter threats, preferably short of military force. We constantly seek to *Prevail* in conflict, winning the current fight and preparing for the next challenge.

CENTCOM PRIORITIES

While the CENTCOM team manages a broad range of difficult challenges on a daily basis, a significant portion of our efforts and resources are necessarily focused in three areas: supporting the Administration's South Asia Strategy—to include Operation Freedom's Sentinel (OFS) and Resolute Support Mission (RSM) in Afghanistan; countering VEOs in the Central Region, to include Operation Inherent Resolve (OIR) in Iraq/Syria; and countering Iranian destabilizing activities across the region.

Supporting the Administration's South Asia Strategy. Since my last posture hearing, CENTCOM has begun a transition—an operational alignment and rebalancing to better address challenges, mitigate risk, and optimize resources in an ever-changing battlespace. With ISIS's territorial control crumbling in Iraq and Syria, we have shifted our main effort to implementing the military component of the South Asia Strategy in Afghanistan through OFS and NATO's non-combat RSM, while still retaining sufficient resources to enable local security forces to prevent the reemergence of ISIS in Iraq and Syria.

The NDS directs us to deter adversaries from aggression against our vital interests and to discourage destabilizing behavior. Working "by, with, and through" the ANDSF, we have maintained constant pressure on the Taliban with the intent of removing their influence on the population and forcing them to reconcile with the Government of the Islamic Republic of Afghanistan (GIROA). Our conditions-based approach to the conflict gives hope to our Afghan partners and demoralizes the enemy. This strategy reaffirms the United States Government's enduring commitment to Afghanistan while supporting two complementary missions—counter-terrorism operations and security force assistance of RSM. Preventing AQ and ISIS–K from directing or supporting external attacks against the United States and our allies is a vital national interest, and the RSM preserves peace through a strong network of alliances both regionally and globally.

The GIROA is making dedicated and transparent efforts to combat corruption at every level and ensure an effective Afghan fighting force. Implementation of the current GIROA 4-Year Roadmap is improving overall ANDSF capabilities. Our method of working "by, with, and through" the ANDSF ensures we are training Afghan forces to take the lead in combat, enabling them with key assets like intelligence and logistics, and working through the GIROA to find Afghan solutions to Afghan problems.

ANDSF capability to respond to crises has greatly improved over the last few years, and they are able to prevent security setbacks from becoming cascading events; however, the ANDSF does not have the ability to prevent the insurgency from maintaining a rural presence and occasionally threatening a population center or critical ground lines of communication (GLOC). The increase in U.S. and RSM partner military personnel enables the provision of enhanced train, advise, and assist capability to the ANDSF. This will advance the ANDSF's ability to plan and execute simultaneous offensive military operations, keeping constant pressure on the enemy.

In addition to our plan for closer, more persistent advising, we are developing critical capabilities within the ANDSF to provide them clear advantages over the Taliban. The Afghan Air Force (AAF) continues to develop offensive capability, and our security cooperation funds are training maintainers as the AAF transitions from dated Russian platforms to modern United States aircraft. We are also working to double the size of the Afghan Army's Special Operations force—currently the most effective combat element against the Taliban.

Simultaneously, we are targeting many of the Taliban's revenue and support networks; illicit narcotics production and trafficking largely finances insurgent operations. The Taliban remains a resilient adversary capable of inflicting heavy ANDSF casualties, but we, shoulder to shoulder with our ANDSF partners, will continue to apply military and economic pressure to force the Taliban to the negotiating table.

Kabul's uncertain political situation remains the greatest risk to stability as the ANDSF increases security nationwide and the GIROA prepares for planned 2018 elections. GIROA continues to suffer from a professional governmental capacity deficit, competing interests, and corruption. We are pursuing opportunities to develop bilateral relationships with Central and South Asian states to promote regional stability and to encourage them, and our NATO allies, to contribute financial and advisory support to the GIROA. As an example, we strongly support improved Indian-Afghanistan ties as a means to advance Kabul's economic interests and increase Afghanistan's financial independence.

As Afghanistan's neighbor and a critical supply route for RSM operations, Pakistan presents both challenges and opportunities as we implement the new South Asia Strategy. Pakistan's cooperation is imperative for the success of our South Asia strategy. As the President made clear in the unveiling of the strategy last August, the United States expects Pakistan to take decisive action against the Taliban and Haqqani Network leaders that operate from its territory. Taliban and Haqqani leadership and fighters continue to find sanctuary in Pakistan. Other Pakistan based groups like Lashkar-e-Tayyiba threaten Pakistan's neighbor, India, and carry out attacks that jeopardize regional stability and United States strategic interests.

Pakistan has made many sacrifices in the war against terrorism, including important contributions in significantly degrading AQ and combatting ISIS–K. Anti-Pakistan militant groups like Tehrik-e-Taliban Pakistan (TTP) are able to conduct devastating terrorist attacks within Pakistan, killing scores of civilians and military. The Pakistani military is conducting counter-terrorism operations against select terrorist groups that target the Pakistani state. Pakistan has also undertaken several high profile and effective counter-insurgency operations in North Waziristan and other parts of the Federally Administered Tribal Area (FATA) against TTP. Security along the border with Afghanistan will remain a priority in 2018 as Pakistan seeks

to expand border control mechanisms and efforts to improve paramilitary security capabilities. Recently we have started to see an increase in communication, information sharing, and actions on the ground in response to our specific requests—these are positive indicators. However, ongoing national counter-terrorism efforts against anti-Pakistan militants throughout the country have not yet translated into the definitive actions we require Pakistan to take against Afghan Taliban or Haqqani leaders. This problem is compounded by increasing cross-border terrorist attacks and fires between Pakistan and Afghanistan, which hinders both countries' abilities to coordinate on border security.

We have preserved our valuable military-to-military relationship with Pakistan and attempted to increase transparency and communication with influential military leaders, while pressing our serious concerns about Pakistan's provision of sanctuary and support to militant and terrorist groups that target United States personnel and interests. Achieving long-term stability in Afghanistan and defeating the insurgency will be difficult without Pakistan's support and assistance. Although most security assistance for Pakistan is currently suspended, since 2002 Pakistan has been among the largest recipients of United States provided Foreign Military Financing (FMF) and International Military Education and Training (IMET). To date Pakistan has also been reimbursed hundreds of millions of dollars in Coalition Support Funds (CSF) for counter-insurgency operations that support United States security objectives in the region. We use ground and air routes in Pakistan to deliver materiel to Afghanistan. However we also have options to utilize routes through the other Central Asian nations.

CENTCOM continues to promote United States interests in the rest of the *Central Asia/South Asia* (CASA) sub-region, which includes the countries of Afghanistan, Pakistan, Kazakhstan, the Kyrgyz Republic, Tajikistan, Turkmenistan, and Uzbekistan. While our Central Asia partners continue to seek United States engagement, Russia, China, and Iran continue to discourage cooperation and engagement between Central Asian countries and the United States. Despite this pressure, several CASA governments continue to support the transit of supplies to United States troops in Afghanistan and engage the United States on shared interests related to access, border security, counter-terrorism, counter-narcotics, and counter-insurgency.

Our Central Asian partners remain concerned about the long-term stability of Afghanistan and Pakistan as well as the specter of returning foreign terrorist fighters to their home countries. We are postured not only to help them address transnational threats, but also to continue to develop our military-to-military relationships in the CASA sub-region. In support of these efforts, our two major forums that promote military cooperation, the CASA Directors of Military Intelligence Conference and CASA Chiefs of Defense Conference, are developing beyond ceremonial affairs into venues that encourage free-flowing military-to-military communication and seek practical solutions to security challenges. These efforts, in addition to our operations in Afghanistan, will ensure that CENTCOM continues to support the Administration's South Asia Strategy in the CASA sub-region with a long-term, regional approach.

The United States-*Kazakhstan* relationship is our most advanced military relationship in Central Asia. We are making notable progress as the Kazakhstani Ministry of Defense focuses on institutional reform of its Non-Commissioned Officer (NCO) corps, human resources administration, and its professional military education system. Reliance on Russian-produced equipment presents challenges to developing a more robust defense sales relationship. Despite these challenges, Kazakhstan looks to the United States to balance, not replace, Russian and Chinese influence through a multi-vector foreign policy, which allows more security cooperation possibilities.

The *Kyrgyz Republic* has increasingly aligned its interests with Russia and China. The United States-Kyrgyz security relationship has declined since the closure of the Manas Transit Center and the termination of the bilateral Defense Cooperation Agreement in 2014. Despite the Kyrgyz armed forces' desire to improve military-to-military cooperation with CENTCOM, Kyrgyz senior civilian leaders have shown little interest in improving military relations.

Tajikistan remains a key United States partner in Central Asia due to its 800-mile border with Afghanistan. While United States–Tajik relations are positive, Russia is increasingly impinging on United States influence and spreading inaccurate information about Afghanistan and the region. Tajikistan is Central Asia's poorest country, and its armed forces are habitually under-funded and ill-equipped, which complicates our efforts to help the Tajiks build and sustain long-term security capacity. Moreover, the Russian forces at the 201st Military base located outside of Dushanbe loom large on the political and military landscape. The Tajik Government

also depends heavily on foreign assistance and on the remittances of its migrant laborers working in Russia, giving Moscow considerable leverage over the country. Despite all of these challenges, CENTCOM continues cooperation with Tajikistan focused on border security, counter-terrorism, and counter-drug trafficking. Tajikistan is a major transit point for Afghan opiates; our efforts to help strengthen Afghan-Tajik border security are important to reducing the drug trade that funds the Taliban and destabilizes the region.

Turkmenistan is an important nation due to its strategic geographic location between Europe and Afghanistan. Turkmenistan, as other Central Asian states, is concerned about instability in Afghanistan and thus supports international counter-VEO, counter-terrorism, and border security efforts. Currently, we are building our partnership with Turkmenistan through medical exchanges.

Uzbekistan remains a key United States partner in Central Asia due to its strategic geographic location at the heart of Eurasia and proximity to Afghanistan. Over the past year, Uzbekistan experienced a relatively smooth succession of power from the late President Karimov to President Shavkat Mirziyoyev, who has instituted a number of reforms as Uzbekistan's second president since independence in 1991. Our bilateral relations serve to counter Russian and Chinese influence in the region. Russia exercises a degree of political and economic influence, yet the Uzbeks continue to pursue a strategic relationship with the United States Uzbekistan has been a relatively closed society, but we are now seeing positive changes within Uzbekistan that are leading to improved military-to-military relations, to include increased military professionalization and training. CENTCOM is also working to improve its military's logistics and sustainment systems to better support previously transferred U.S. defense equipment. We also continue efforts to bolster Uzbekistan's Special Operations Forces.

Countering Violent Extremist Organizations. Another critical objective from the NDS is to prevent terrorists from directing or supporting external operations against the U.S. Homeland, allies, and partners. In the past year, Operation Inherent Resolve has achieved remarkable success against ISIS in Iraq and Syria. The ISF and SDF are operating at their most effective levels since the operation began. Millions of IDPs have returned home and are starting to rebuild. The destruction of ISIS' so called physical "caliphate" is imminent, but now we must consolidate gains by investing in the population that will hold this territory and keep ISIS from returning. The United States Strategy for Iraq contains four primary objectives: stabilize Iraq, limit Iran's influence and its use of Iraq to shape the Middle East, achieve a stable Iraq economy, and sustain an enduring relationship with the ISF. We must now look to how we effectively resource these objectives along with the President's objectives in Syria.

The Coalition's campaign to defeat ISIS has had considerable success. Coalition airstrikes have killed hundreds of ISIS leadership figures and facilitators in Iraq and Syria, which has disrupted ISIS' command and control network; degraded its use of unmanned aerial systems (UAS); reduced its ability to conduct research and development, procurement, and administration; and denied sources of funding for terrorist activities. These losses have undermined ISIS' ability to conduct attacks throughout the region and the world. With the loss of terrain and the liberation of the population, ISIS can no longer generate funding through extortion and taxation. Additionally, airstrikes and ground operations have crippled and seized hydrocarbon generating facilities and facilitation routes that moved and supplied ISIS fighters and supported illicit oil sales. We have also degraded ISIS media operations; the most recent version of their monthly online terror magazine "Rumiyah" was last published in September 2017.

In Iraq, the ISF fought a vicious, urban battle to liberate Mosul, with ISIS providing stiff resistance using tunnels, vehicle-borne improvised explosive devices (VBIEDs), and unmanned aerial systems. The liberation of Mosul provided the ISF with the momentum that led to the quick liberation of Tal Afar and Hawijah. Our partnership with the ISF is an excellent example of the successful application of the "by, with, and through" approach. Using a minimal number of U.S. and Coalition advisors, we enabled the ISF with robust communications, logistics, intelligence, and precision fires. Iraqi forces led from the front in each operation, and their success elevated their legitimacy with the population.

There remain enduring political and cultural challenges in Iraq. Reconstruction, discontent with corruption and any delay of rebuilding efforts as well as the Kurdistan stand-off could fuel future instability. ISIS' reversion to an underground insurgency will remove the greatest unifying factor among Iraq's competing factions and may reignite unresolved grievances. In the post-ISIS period, the GoI will be challenged to rebuild Sunni areas while balancing competing security demands, enacting government reforms, and managing tensions among Iraq's political factions.

The KRG remains a strategic partner and their negotiations with Baghdad for a peaceful settlement are critical to ensure the disputed territories are not further complicated by intra-Iraq divisions.

In Syria, the fight against ISIS has been complicated by the multiple countries involved in the conflict, many of whom have widely divergent interests. Syrian President Bashar al Assad remains in power, and, due to military support from Russia, Iran, and Lebanese Hizballah (LH), is attempting to bring all of Syria under regime control. In 2017, the regime made significant territorial gains in central and eastern Syria, culminating in reducing opposition enclaves in western Syria and seizing urban centers from ISIS along the western bank of the Euphrates River from ISIS. Nevertheless, the Assad regime has insufficient forces to adequately secure recaptured territory and often faces insurgent counterattacks behind its lines. The regime is highly dependent on billions of dollars in external Iranian and Russian economic and military support, the cost of which press both Moscow and Tehran to seek an end to the conflict.

The intervention of the Coalition and regional powers in the Syrian conflict has blocked Assad's ability to recapture major portions of northern Syria, and entrenched opposition fighters and VEOs across Syria continue to challenge regime control. Diplomatic efforts to establish de-escalation zones were most successful in a deal negotiated between Russia, the United States, and Jordan in southwest Syria. Russian and Iranian-led Astana talks have been far less successful, and Russian bombardment of the Astana agreed de-escalation zone in East Ghouta calls into question Moscow's sincerity in guaranteeing the security of these areas. There has been some success, often under UN auspices, to negotiate on humanitarian issues, but Syrian regime recalcitrance to allow aid deliveries is probably driven by Assad's choice to use starvation as a weapon of war. Assad's reluctance to negotiate directly with the Syrian opposition, and Moscow's reluctance to force him to do so, indicates significant challenges lie ahead in forging a political resolution to the conflict.

For the Coalition, the SDF's liberation of ISIS' capital Raqqah in October 2017 was a significant turning point in the conflict. The SDF, which is composed of local Sunni Arabs and Kurds, has been a valuable partner in the fight against ISIS, and they sacrificed greatly to liberate large portions of their country. Simultaneous operations by the SDF in Syria and the ISF and PMF in Iraq effectively isolated ISIS remnants in the Middle Euphrates River Valley (MERV) and along the Syrian side of the Iraq-Syria border where both forces are currently conducting operations to kill or capture all remaining ISIS fighters.

Pro-Regime Forces (PRF) and Russia also continue to operate in the MERV as they isolate ISIS fighters south of the Euphrates River, though Assad's decision to prematurely withdraw his forces has likely given valuable breathing room to ISIS on the western side of the river. With PRF operating in close proximity to Coalition-backed forces in the MERV, de-confliction measures are vital, and we have worked closely with Russia to prevent accidental strikes and to ensure the safety of the various forces on an increasingly complex battlefield. The Coalition does not seek to fight the Syrian regime, Russian or pro-regime forces partnered with them. While the deconfliction efforts have been largely effective, the Coalition recently demonstrated its commitment to defend United States and partner forces operating in Syria by striking PRF that conducted an unprovoked attack on SDF and Coalition forces. We will continue to do so, as necessary.

Though our partnership with the SDF is critical to defeating ISIS in Syria, it has created challenges with our NATO ally Turkey, who views the Kurdish People's Protection Units (YPG) elements within the SDF as analogous to the PKK terrorist group. United States Special Operations forces have been working with vetted elements of the SDF for several years to defeat ISIS. Our assistance to the SDF has been focused on this goal, and we have included safeguards and transparency measures to ensure it does not physically threaten Turkey. In January, Turkey began air strikes and ground incursions into the predominantly Kurdish enclave of Afrin, where CENTCOM has no presence or direct relationships in northwest Syria, in an attempt to, according to the Government of Turkey, "remove the terrorist threat from its border." Though we have no relationship with YPG fighters in Afrin, who previously cooperated with Russia and the regime, these operations directly impact our ability to affect a lasting defeat against ISIS through the SDF. Many fighters in the SDF have familial ties to the Kurds in Afrin, and they are now forced to choose between completing operations against ISIS fighters in the MERV and assisting their fellow Kurds in northern Syria. Our alliance with Turkey is paramount, and we will continue to assist the Turkish military in countering the PKK and other VEOs that threaten their border, but we must continue to urge restraint as their actions have clearly increased risk to our campaign to defeat ISIS.

Amidst the visible damage caused by the Syrian civil war, the country has also witnessed a far less-publicized change: democratic organizations in the form of local civil councils have assembled in places previously controlled by ISIS. These councils are providing the necessary basic functions of governance and starting to rebuild their war-torn communities. These ad-hoc democratic organizations come in various forms and engage in a range of activities from providing the most basic services to rallying the population against the re-emergence of VEOs. For example, in the cities of Manbij and Raqqah, local councils ran civic campaigns against ISIS in concert with more moderate rebel groups, providing a two-pronged strategy that ultimately prevented ISIS from regaining a foothold in these areas. In other parts of Syria, councils have developed a more sophisticated capacity and are building roads, repairing sewage lines, and holding local elections. As Secretary of State Tillerson has said, "Interim local political arrangements that give voice to all groups and ethnicities supportive of Syria's broader political transition must emerge with international support." Any interim arrangements must be truly representative and must not threaten any of Syria's neighboring states. Similarly, the voices of Syrians from these regions must be heard in Geneva and in the broader discussion about Syria's future." The key to the success of these groups is their ability to maintain legitimacy among the populace.

Although these local councils have made great strides, they can only provide aid and assistance to the population at the pace at which they receive it. As we enable local solutions to local problems, supporting these local councils with our full range of Department of Defense, interagency, and Coalition capabilities will help them maintain popular support and set conditions for enduring, stable governance.

A significant challenge we face as we complete the defeat of ISIS is the repatriation of hundreds of foreign fighters to their home countries. The SDF and ISF are both holding several hundred fighters from a number of different countries in prisons or temporary detention facilities, with no clear process for prosecution or repatriation. The longer these fighters remain in detention together, the greater danger they pose as they form new connections, share lessons learned, and prepare to reestablish networks upon their release or escape. This urgent problem requires a concerted international effort involving law enforcement, intelligence sharing, and diplomatic agreements.

Yemen is another area where VEOs pose a threat to the Homeland. The civil war continues unabated and the humanitarian crisis worsened in the last year. Saudi Arabia and the UAE continue to lead a coalition supporting Yemeni President Abdrabbuh Mansour Hadi, and despite attempts to reestablish itself in Aden, some elements of the Republic of Yemen Government (ROYG) remain in Riyadh, Saudi Arabia. Houthi forces control Yemen's capital, Sana'a, and are undeterred in their efforts to retain key territory and attack the Saudi coalition. The civil war has severely affected Yemen's population, with nearly 80 percent of the population requiring urgent humanitarian assistance. Similarly, its economy has been devastated by insecurity, extremely high unemployment (35 percent) and near cessation of its petroleum industry. Neither the Houthis nor the exiled Hadi Government has the ability to govern effectively. In December 2017, the relationship between previously aligned Houthis and former President Ali Abdullah Salih disintegrated and culminated with Salih's assassination by his former allies. It is unclear if the Saudi-backed Hadi faction can capitalize on these events, and Salih's forces have splintered, adding continued chaos.

Terrorist groups like AQAP and ISIS–Yemen continue to maintain a presence in Yemen and are focused on attacks against ROYG, the Saudi coalition, and Houthi targets. Since mid-2014, ISIS–Yemen has leveraged the chaotic security situation to expand its capabilities and conduct intermittent attacks against Saudi coalition and Yemeni security targets in Aden. AQAP still aspires to threaten Western interests with high-profile attacks, although United States and Saudi coalition strikes have removed successive levels of leadership and logistics support, critically damaging their network. Our Emirati partners have also played a key role in countering the threat from AQAP and ISIS–Yemen in southern Yemen.

The conflict in Yemen has opened opportunities for Iran, which continues to provide support to the Houthis with the aim of building a proxy to pressure the Saudi-led coalition and expand its sphere of influence. This support enabled the Houthis to launch missiles at Saudi Arabian and Emirati cities and target ships in the Bab al Mandab and Red Sea on multiple occasions in the last year, threatening Americans and our partners and raising the risk of broader regional conflict.

CENTCOM is partnering with the Saudi-led coalition to help maintain a favorable regional balance. Our goal is to ensure that nations in close proximity to Yemen are able to secure their borders and safeguard their populations while negotiations lead to a cessation of hostilities between Houthis and the ROYG. Saudi Arabia has an-

nounced that it is working to facilitate the movement of humanitarian assistance, food, and fuel by opening ground and air avenues from Saudi Arabia into Yemen, utilizing additional ports, and partnering with NGOs to provide humanitarian and medical assistance.

The Levant, which includes the countries of, Syria, Israel, Jordan, and Lebanon—and Iraq and Egypt remain an active area for CENTCOM theater security cooperation and partnership due to instability stemming from the Syrian Civil War, the rise of ISIS, and malign Iranian influence. Though the scourge of ISIS is receding, Levantine countries remain under threat of attack, as seen in Egypt where ISIS–Sinai continues to carry out barbaric attacks against civilians and Egyptian security forces, including the November murder of over 300 citizens in prayer at a mosque in northern Sinai. United States assistance to our partners in the Levant has enabled improved border security in Lebanon and Jordan. The Lebanese Armed Forces (LAF) demonstrated this kinetically in August—expertly routing ISIS fighters on their eastern border during Operation Dawn of the Hills.

In *Jordan,* the Jordanian Armed Forces (JAF) remain a dedicated partner, providing access, basing, and overflight essential to furthering U.S. interests in the region—we must ensure we do not take them for granted. Though the GOJ and the JAF have successfully handled security concerns and domestic stability challenges, regional turmoil and persistently low economic growth rates have led to rising unemployment and high national debt. Additionally, Jordan currently hosts approximately 660,000 UN-registered Syrian refugees and 63,000 Iraqi refugees, straining government resources, services, and infrastructure. Despite this strain, the GOJ recently facilitated critical humanitarian support to the Rukban IDP camp on the Syrian side of the border. Continued commitment to funding Title 10 programs, in addition to FMF and economic and humanitarian assistance, enables Jordan to mitigate its humanitarian and economic difficulties, while remaining a capable partner in coalition efforts. The JAF is also contributing to stabilization efforts in OIR, including reopening the Turaybil / Karama border crossing with Iraq in August 2017, a key step in normalizing relations and restoring trade between the two countries.

Lebanon is critical to our national security interests and exemplifies our challenges in the Middle East. Wedged between a key friend in the region, Israel, and a corridor of Iranian influence from Tehran through Iraq and Syria, Lebanon has managed to remain relatively stable in a region embroiled in conflict. However, Lebanon faces a stagnant economy, a Syrian refugee crisis, and the growing influence of Hizballah, which holds a de-facto veto on Lebanese policy decisions due to their strategic political alliances, omnipresent threat of violence, strength as a social service provider, and financial support from Iran. Furthermore, the possibility of an Israel-Hizballah conflict is a constant threat to the stability of Lebanon and security of Israel.

Our effort to strengthen the Lebanese security forces, especially the LAF, as the country's only legitimate security provider is a critical aspect of our policy to promote Lebanese sovereignty and security. With successful operations like Dawn of the Hills, the Lebanese people are realizing more and more that the LAF, their country's most trusted and respected institution, is increasingly capable of protecting them from external threats. The United States is the LAF's top security assistance partner, and our consistent, long-term commitment and training efforts, in addition to the more than $1.7 billion in security assistance provided since 2006, have successfully modernized and strengthened the LAF as a fighting force. U.S. Special Operations military and civilian personnel have forged a strong relationship with the LAF and enhanced their capabilities, making them a capable partner in our regional counter-terrorism campaign. During the most recent military operations against ISIS, United States military personnel assisted the LAF in planning and conducting combined arms maneuver, aerial reconnaissance, and integrated fires. Since our security assistance began, Lebanon has maintained an exemplary track-record for adhering to regular and enhanced end-use monitoring protocols. We are confident the LAF has not transferred equipment to Hizballah. Nonetheless, we are concerned about Hizballah's efforts to infiltrate Lebanon's security institutions and have made clear that any cooperation with Hizballah will risk our continued cooperation and assistance.

On the western edge of the CENTCOM area of responsibility, *Egypt* remains an anchor of United States interests in the region given its strategic location, demographic heft, religious and cultural influence, and its enduring peace treaty with Israel. Egypt is an essential partner in countering the flow of foreign fighters, materiel, and financial support to extremists transiting from Libya through Egypt into the Central Region. Egypt supports our overflight requests, ensures Suez Canal transit, and shares our commitment to defeat ISIS. The cornerstone of this relationship is our security assistance partnership. In one example of our intensifying joint

efforts, in January 2018, we celebrated the successful signing of the bilateral Communications Interoperability and Security Memorandum of Agreement (CIS MOA), crowning over thirty years of effort to enhance security and counterterrorism cooperation.

ISIS–Sinai continues to conduct daily attacks against the Egyptian Armed Forces (EAF) and security services, causing hundreds of casualties, while other extremist organizations have carried out attacks on the mainland. The United States commitment to continuing to support Egypt in this fight against terrorism, in bringing security for the Egyptian people, is steadfast. Until now, the EAF has contained most of the violence in the northeastern Sinai Peninsula; however, without a comprehensive whole-of-government strategy to defeat ISIS–Sinai, the threat will persist and grow. The United States is committed to working with Egypt to develop a comprehensive counter-insurgency strategy that addresses the underlying political, economic, and social conditions that give rise to extremist elements, while defeating the threats that plague Egypt and the region.

Through our partnership efforts, we have observed improvement in the security of Egyptian maritime and land borders. The EAF has shown some success stemming the flow of fighters and illicit material into Israel and the Central Region. We will look to strengthen our security cooperation partnership through continued engagement and with development of their counterterrorism/counter-insurgency strategy and capabilities, including the prioritization of FMF toward appropriate defense articles and training. In fiscal year 2016 and fiscal year 2017, Congress appropriated up to $1.3 billion in FMF and $1.8 million in IMET. As a sign of our continued support of Egypt's efforts, the President requested Congress continue to provide $1.3 billion in military assistance for Egypt in fiscal year 2018, despite the increasingly constrained budget environment. Moreover, the United States and Egypt have elevated the strategic nature of the assistance relationship through mechanisms such as our Military Cooperation Committee and Defense Resourcing Conferences. Through these means we help Egypt plan for its security needs on a long-term basis.

Countering Iranian Expansionism. Countering the Iranian regime's malign influence in the region is a key component of our efforts to defend allies from military aggression, bolster our partners against coercion, and share responsibilities for the common defense. Our relationships with the GCC countries play a key role in this effort.

Iran is generating instability across the region, and the Iranian Threat Network (ITN) continues to increase in strength, enhancing its capacity to threaten United States and partner nation interests. Concurrently, the Iranian regime continues to maintain longstanding criticisms that the United States is a source of instability in the Middle East and cannot be trusted. While the International Atomic Energy Agency reports that it continues to monitor and verify Tehran's implementation of its JCPOA nuclear-related commitments, Iran continues to express frustration with the degree and pace of sanctions relief under the JCPOA and has publicly criticized United States statements regarding continued participation in the JCPOA. Iran seeks expanded economic, and in some cases diplomatic, engagement with the International Community to achieve what it views as the full benefits of sanctions relief afforded under the deal. The United States is upholding its JPCOA commitments and has made clear that Iran's economic troubles stem not from issues related to JCPOA implementation, but from internal economic mismanagement, a weak banking sector, and widespread corruption, among other factors.

Over the past year, Iran has focused its regional efforts primarily on operations in Syria and Iraq to expand its influence in the region and secure supply routes to Hizballah to threaten Israel. Iran has provided increasingly sophisticated maritime and missile attack capabilities to the Houthis in Yemen. Additionally, Iran continues smaller-scale support to other groups such as Bahraini Shiite militants, Gaza militants, and the Afghan Taliban. It remains wary of U.S. and coalition intentions throughout the region, and continues to engage Western nations in the "gray zone," rather than through direct conflict.

Iran will continue to pursue policies that threaten United States strategic interests and goals throughout the Middle East while seeking to expand diplomatic and economic relations with a wide range of nations. Leaders in the Islamic Revolutionary Guard Corps—Quds Force (IRGC–QF) have taken advantage of surrogates, businesses, and logistics entities to execute direct action, intelligence, influence building, terrorism, and cyber operations against the U.S. and our partner nations. By supporting proxies in the fight against ISIS in Iraq and Syria and against the Saudi coalition in Yemen, Tehran seeks to gain lasting influence and indebted allies in each country. The conflict in Syria has also proven the ITN's expeditionary capacity; fighters from Iraq, Afghanistan, Pakistan, and Lebanon wage war there solely

at Iran's behest. After the current conflicts abate, the ITN will undoubtedly turn its attention to other adversaries; future flashpoints could occur wherever there is a United States or allied presence.

Iran continues to acquire and develop increasingly lethal weapons to raise the cost of direct military conflict. The expansion of Iran's military capabilities over the last decade enables Tehran to threaten international trade and regional stability throughout the Gulf and beyond. Production of advanced military equipment and threats to the free flow of commerce through the Strait of Hormuz are intended to challenge the U.S. enduring presence in the region. Iran's military is composed of approximately 700,000 personnel divided into two separate militaries: the Islamic Republic of Iran Armed Forces (Artesh) and the Islamic Revolutionary Guard Corps (IRGC), which both continue to improve. Iran's ground forces are improving their ability to quickly mobilize and deploy in response to internal and external threats. Iran has also advertised the development of quick reaction forces, consisting of armor, artillery, and heliborne assets that can deploy within 4 hours.

Iran postures its forces and supports proxies to threaten—or be able to threaten—strategic locations like the Bab al Mandeb, Strait of Hormuz, and oil platforms. With little warning, Iran could quickly close the Strait of Hormuz using stockpiles of naval mines and disrupt key maritime chokepoints throughout the region. Iranian surface to air missiles (SAMs) along its littoral pose a significant threat to United States Intelligence, Surveillance, Reconnaissance (ISR) assets operating in international airspace. During 2017, Iran's capabilities improved with the deployment of advanced S–300 long-range SAM systems provided by Russia.

Additionally, Tehran continues to increase its strategic power projection capability with its expanding ballistic missile force. Iran has the largest missile force in the Middle East, which can range 1,200 miles and reach key targets in the region. Iran is continuing to increase the range, precision, and lethality of these missile systems. Tehran relies on these systems to deter adversaries and provide a reliable retaliatory capability against neighbors and United States Forces.

Iran intends to expand its regional influence, counter Saudi Arabia, threaten Israel, and maintain a capability to threaten strategically important maritime transit routes in the Bab al Mandeb, Strait of Hormuz, and the Gulf. On a positive note, over the past year, we have seen an overall reduction in unprofessional Iranian actions toward United States and coalition vessels; such interactions decreased by 36 percent from 2016 to 2017.

To counter Iranian expansionism and destabilizing activities, CENTCOM will deter conventional Iranian aggression, bolster our network of allies and partners, and compete for influence throughout the region. Our forces maintain a high level of readiness at bases across the region and consistently patrol the waterways—this persistent presence deters Iranian conventional military attacks against our allies and protects international sea lanes. By improving our Arab partners' capacity to defend themselves and encouraging them to work together as a coalition, we also create a bulwark against Iranian aggression and proxy warfare.

Our efforts to compete to be the partner of choice for our Gulf and Levant partners further weakens Iranian threat networks and limits Tehran's malign political, economic, and military influence. This is especially crucial in Iraq, where Baghdad must work with Iran as a neighboring state, but limit Tehran's manipulation and infiltration of political parties and government institutions. We must continue to be a reliable partner to the ISF to build their capacity to provide internal security and protect their borders. Ongoing stabilization efforts that strengthen Iraqi social and economic institutions will also impede Iran's ability to negatively influence our Iraqi partner.

On the *Arabian Peninsula,* GCC states are among the United States' best partners in the region and a counter-balance to Iran. The virtually unhindered access, basing, and overflight approvals from our Gulf partners, as well as their contributions of troops and airlift have been critical to the success of Defeat-ISIS operations over the past year. The GCC also represents the most promising baseline effort for promoting collective defense initiatives, including joint counter-terrorism and ballistic missile defense. As they look to the United States for military equipment, training, and assistance, it is essential we seek opportunities to include GCC partners in our combined efforts to defeat regional threats posed by extremism and Iran's burgeoning influence. However, the most significant complicating factor in the unified deterrence to Iranian malign activity is the still-unresolved rift between Saudi Arabia, UAE, Bahrain, and Egypt with Qatar. While efforts to reduce the impact on military-to-military relationships among the Gulf States have been largely successful, the rift continues to present challenges in the political sphere.

Within the GCC, the *Kingdom of Saudi Arabia (KSA)* is undergoing potentially far-reaching changes in social, economic, and security spheres under the banner of

Vision 2030 and the National Transformation Plan, which includes wide ranging fiscal and cultural liberalization. This could alter the dynamics of the Saudi economy. King Salman's appointment of his son Mohammed bin Salman as the Crown Prince, the purported anti-corruption campaign, and recent Saudi efforts to influence Lebanon have exacerbated an environment of uncertainty in the kingdom's future.

Saudi Arabia remains embroiled in the conflict in Yemen, which appears to be at an impasse in terms of a political or diplomatic solution with the Houthis. To assist with the military aspects of the conflict, we have increased the number of advisors to the Saudi military over the past year to help improve command and control and formalize targeting processes. These additional training and advisory efforts will help mitigate incidents of avoidable civilian casualties in Yemen.

The *United Arab Emirates'* strategic location, vast natural resources, willingness to engage terrorist organizations, and ambition to be at the forefront of military innovation makes them a valuable partner. The UAE was among the first countries to join the Defeat-ISIS Coalition. Although its military role tapered off when its resources shifted to Yemen in March 2015, Abu Dhabi remains active in pursuing many of the Coalition's lines of effort, including counter-ISIS messaging, stabilization, countering ISIS financing, and stemming the flow of foreign fighters.

Bahrain hosts CENTCOM's naval component and CMF and has publicly supported the Defeat-ISIS effort, including allowing United States forces to conduct counter-ISIS strikes from its territory. In Yemen, Bahrain's air, land, and sea forces participated in Saudi-led coalition operations against AQAP and the Houthis; these deployments have improved the overall readiness of the Bahrain Defense Force. We continue to make strides in our collaborative efforts to enhance the Bahraini Coast Guard's capacity and expand Bahrain's role in countering piracy and violent extremism in the region's maritime domain.

Internally, Bahrain is dealing with a domestic economy negatively impacted by low oil prices, political discord, and a persistent, low-level threat from Iranian-backed militant groups. We continue to provide appropriate assistance to help it address security threats. Prior restrictions on FMS to Bahrain created tension in the bilateral relationship; recent movement on key FMS cases, however, has provided renewed strength in military and political ties with Bahrain. We continue to reassure our Bahraini counterparts that we remain committed to our partnership, while also encouraging them to respect freedom of expression and pursue dialogue with the nonviolent political opposition.

The Government of *Kuwait* continues to provide a critical environment within the Central Region for access, basing, and overflight in support of U.S. and coalition operations and hosts the forward headquarters of CENTCOM's army component, U.S. Army Central Command. Kuwait is also CENTCOM's primary logistics gateway for movement into and out of the region.

Over the last 20 years *Qatar* has provided the United States with invaluable regional access through basing and freedom of movement for United States Forces at Camp As-Sayliyah and Al Udeid Air Base—home to the Combined Air Operations Center, U.S. Air Forces Central Command, U.S. Special Operations Command Central Forward, and the CENTCOM Forward Headquarters. Qatar hosts approximately 10,000 United States servicemembers, and aircraft launched from Al Udeid Air Base support operations throughout the region.

While the rift has had little direct impact on U.S. operations, it has imposed significant restrictions on Qatar's freedom of movement in the region through the closure of land borders and air space. Additionally, it has impacted Qatar's participation in Gulf state-hosted multilateral exercises and eroded coalition building efforts. It has also proven to be a distraction from Saudi-led operations in Yemen. In a concerning development, the rift has pushed Qatar to become more reliant on Iran and less connected to the GCC.

Despite its small size, Qatar has contributed to coalition operations throughout the region, including against ISIS, and seeks to expand its participation in other regional coalitions. Qatar is currently the second largest FMS customer in the world with $25 billion dollars in new cases and is on track to surpass $40 billion dollars in the next 5 years with additional FMS purchases. Qatar's efforts to expand its military both in size and capacity have resulted in increased bilateral military engagements between CENTCOM and the Qatari Armed Forces. This gives the United States an invaluable opportunity to make a positive impact on the military development of a key partner in a turbulent region.

The *Sultanate of Oman's* relationship with the United States remains strong, and Oman continues to play a constructive role in regional diplomatic issues, including serving as an interlocutor for the United States in dealing with Yemen, Iran, and the GCC. However, unless the government successfully makes policy changes to constrain government spending and attract foreign investment, Muscat will likely face

an economic crisis in the next few years. Oman's strategic location provides CENTCOM with key logistical, operational, and contingency capabilities; it provides important access in the form of over 5,000 aircraft overflights, 600 aircraft landings, and 80 port calls annually. The Omani military also participates in numerous bilateral exercises and training events on a yearly basis.

REQUIRED PROGRAMS, CAPABILITIES, AND RESOURCES

In order to ensure we can effectively execute the NDS and protect our national interests, we must be properly postured, alongside our interagency partners, with the necessary policies, capabilities, and resources to address the challenges and capitalize on the opportunities mentioned above. To this end, CENTCOM requires specific means in the form of programs, capabilities, and resources. We sincerely appreciate Congress' continued support for fiscal authorities and appropriations required to support on-going theater operations, as well as the increased responsiveness of the USG in tackling the challenges inherent to the Central Region's complex environment.

Building Partner Capacity (BPC). The Counter-ISIS Train and Equip Fund (CTEF), Afghan Security Forces Fund (ASFF), Combatant Commanders Initiatives Fund (CCIF), Coalition Support Fund (CSF), and Commander's Emergency Response Program (CERP) have been key enablers to the battlefield successes the Coalition achieved in disrupting and dismantling ISIS and the Taliban. Your approval and increase in ASFF funding to support Afghan Aviation modernization allowed the ANDSF to begin closing their gaps in aerial fires and lift capability and reduced their reliance on United States and Coalition forces, while also making them more lethal against the Taliban and ISIS–K.

In Syria, CTEF-procured equipment and supplies provided to the Vetted Syrian Opposition (VSO) like the SDF have been instrumental to their success against ISIS. We will continue to use Overseas Humanitarian, Disaster, and Civic Aid (OHDACA) and other humanitarian and civic assistance funding to improve conditions and access for other U.S. federal and international aid organizations' follow-on missions. These authorities must respond in a timely manner to environmental and operational challenges. We continue to prioritize our needs based on our most critical requirements, coalition and interagency capabilities, and the conditions on the ground.

In Iraq, the success of the ISF in dismantling the physical caliphate and the fragmentation of the ISIS hybrid-conventional force over the past year is a validation of our Coalition's BPC effort. As we reduced major combat operations, the authorities granted to the Office of Security Cooperation—Iraq (OSC–I) were expanded to cover critical sustainment efforts. These authorities allow OSC–I to work with all ISF that are posturing to battle a potential insurgency and secure their border with Syria. OSC–I is currently executing programs to enhance professionalization of the ISF along with prudent implementation and oversight of FMF. In fiscal year 2018, OSC–I will leverage $42 million in authorities to transform the ISF into a sustainable, affordable, and effective force through security sector reform and security cooperation efforts.

CENTCOM efforts to implement and focus BPC initiatives yielded increased capabilities to support security cooperation and partner nation goals. The section 333 authority also authorizes funds to be available for two fiscal years and program sustainment for up to 5 years, allowing for execution of long-lead time programs without cross-fiscal year constraints and improved program maintenance, training, and sustainment support.

The *CENTCOM Exercise and Training Program* continues to be one of the most cost effective and efficient tools to conduct security cooperation engagement with partner nations throughout the region. Every exercise, including the planning process, provides an opportunity to demonstrate U.S. resolve in the region, strengthen partnerships, promote cooperation among our partners, conduct key leader engagements, and sustain and improve both joint and combined readiness. The program continued to grow in complexity and relevance with extended participation throughout the CENTCOM region during fiscal year 2017 and into fiscal year 2018.

CENTCOM executed 53 bilateral and multilateral exercises during fiscal year 2017 with 42 partner nations, spanning seven Combatant and Functional Commands. This enhanced U.S. Joint Force capability supports theater-wide contingency operations and sustains U.S. presence and access in the region. Other program impacts include improving partner nation interoperability through military-to-military engagement, integrating staff planning, executing Joint and Combined operations, developing coalition warfare, and refining complementary partner warfare capabili-

ties given conflicts that are increasingly trans-regional, multi-domain, and multi-functional in nature.

However, continued force reductions in the area of responsibility, as well as the increased operational use of forces remaining in theater, threaten the viability of the CENTCOM Joint Exercise Program. Exercises like Eager Lion—the largest CENTCOM exercise—are routinely affected by reductions in participating forces or threatened with cancellation due to competing requirements for operational forces. Mitigation is limited with current exercise program funding levels that provide restricted air/surface options for movement of out-of-theater (CONUS) based forces to participate in exercises.

Forces and Equipment: The Key to Interoperability. With the greater focus on operations "by, with, and through" our partners to accomplish common objectives, interoperability is increasingly important, and our BPC and FMS programs remain instrumental to this process. The "total package" approach with which we pursue equipment support and long-term sustainment ensures that maintenance support and training are a part of the FMS plan from the outset.

However, due to political considerations, cost, or delivery speed, some of our partners are seeking alternate sources of military equipment from near-peer competitors like Russia and China. When our partners go elsewhere, it reduces our interoperability and challenges our ability to incorporate their contributions into theater efforts.

CENTCOM must also remain prepared for major unforeseen contingencies and crises; prepositioned war reserve materiel is a critical equipment enabler as we posture to address emerging and unforeseen threats. The tyranny of distance between our service depots and the Central Region requires ready, prepositioned capability sets that can rapidly integrate with deploying forces for contingency response. These capability sets provide the necessary shock absorber and help us preserve decision space for the national leadership at the front-end of emerging contingencies. Congressional support for the services' regeneration and reset of prepositioned war reserve materiel remains essential to our operational depth and resiliency.

Integrated Air and Missile Defense (IAMD). We are also working to counter the adaptive threats from enemy networks and adversary states in the form of emerging missile and unmanned aircraft technologies. CENTCOM continues to employ IAMD and Counter Unmanned Aerial System (CUAS) resources to provide the best possible defense design to the theater.

Threat missile systems continue to improve in accuracy, giving them the ability to selectively target CENTCOM's critical assets. Current IAMD resources remain vital to helping CENTCOM maintain acceptable levels of risk without creating additional demand on the force. Providing IAMD protection to deployed U.S. forces and our critical infrastructure is crucial to mission success and provides a visible deterrence to regional aggression. Moreover, it signals U.S. commitment to partners and provides flexibility to respond to contingencies.

Partner nations continue to field missile defense systems that are technologically interoperable with U.S.-based defense systems. Several partner nations have also expressed interest in working together with the U.S. to address the growing CUAS problem set. We must work with our partners to integrate the systems into one comprehensive network that enables better interaction, flexibility, and increased levels of protection against all potential adversarial air and missile threats.

Several of the GCC countries have expressed a desire to integrate their missile and CUAS defense systems with U.S. IAMD systems. The U.S. Patriot force in the GCC is an important warfighting capability and a visible symbol of U.S. partnership, resolve, and deterrence and is linked to bi-lateral defense agreements. Integration of these systems would increase duration and level of protection provided by the defense design against the spectrum of threats in theater.

Critical Munitions. We appreciate continued Congressional support for the procurement and development of precision and specific purpose munitions, which are essential to defeat the threats to our national interests. Multiple factors increase demand on worldwide precision munitions stock levels, to include readiness to address threats from China and Russia, enduring combat operations, investment in our "by, with, through" approach, our directive to minimize collateral damage, and the drawdown in munitions funding prior to OIR. Projected expenditures coupled with partner requests for precision munitions show a system under stress down to the industrial level. Saudi Arabia, in particular, continues to request precision munitions to assist in reducing the threat from Iranian-supported Houthi forces in Yemen in the most precise manner possible.

We have implemented controls for existing and projected requirements to ensure we can meet our current commitments while staying ready to meet future operational needs. We also continue to work across the Department on process improve-

ments to provide a more precise demand signal to the Services and the industrial base and enable multi-year investment in this critical commodity area. Congressional support for base budget, production, and forward positioning of critical preferred precision and specific purpose munitions is vital to the future success of military operations.

Intelligence, Surveillance, Reconnaissance (ISR) Assets. Competition with China and Russia are increasing demands across the theater for ISR assets. In addition to continued ISR requirements to enable our partners in Iraq, Syria, and Afghanistan, counter-Iran operations in Yemen, the Bab al Mandeb, and the Gulf place substantial ISR demands on already severely limited resources. We also anticipate additional requirements to assist Egypt in their counter-ISIS operations in the Sinai

The Processing, Exploitation, and Dissemination (PED) enterprise is also stressed by continuous operations; shortfalls of PED for collected intelligence will continue in the foreseeable future, necessitating an increased focus on automation and development of new PED tools, including tools to exploit publically available information. Funding for organizations such as the National Media Exploitation Center is also critical to our ability to handle the volume of captured enemy material.

In order to partially mitigate these ISR shortfalls, CENTCOM is working closely with the Services, Joint Staff, Combat Support Agencies, Office of the Secretary of Defense, and the interagency to acquire contract ISR solutions, incorporate non-traditional ISR (such as that collected from strike assets), and improve efficiency and asset de-confliction.

Our Coalition partners are also assisting with ISR collection and PED, but this support is limited by national policies regarding deployed force levels and manner of employment as well as resource shortages. Further, partners are generally challenged to address many of CENTCOM's requirements, such as those where multi-discipline, low-observable, or strike-capable assets are required. All of these factors combine to substantially increase operational risk in those areas that will not receive adequate ISR coverage due to decreased capacity.

Information Operations/Strategic Communications. The operational information environment continues to evolve at a rapid pace; our adversaries are not limited by geographic boundaries as they increase global radicalization and recruitment online. Russia and Iran are also waging strategic communications campaigns to cloud perceptions of United States success in Syria and Iraq and to call into question our commitment to key partners in the region. Offensive Information Operations (OIO) capabilities developed and refined over the last 2 years provide CENTCOM and the Department of Defense with the best "high impact/low cost" investment to deter aggression, counter destabilizing behavior, and decrease the potential for direct action operations requirements. CENTCOM combines actions and information by employing assets ranging from print, radio, television, and the internet to conduct robust, synchronized information operations in order to influence, disrupt, corrupt, or usurp our adversary's decision making. These efforts also directly support both the Iran and Iraq strategies that specifically call for integrated strategic communications campaigns.

The ISIS problem set has enabled the Department of Defense to closely collaborate with other United States Government agencies, Coalition partners, and regional allies to coordinate and synchronize messaging strategies. We are building on our combined experiences to create a broad, long-term, whole-of-government approach that amplifies our efforts toward conflict prevention. We also routinely work with Iraq, Jordan, Kuwait, and Saudi Arabia to improve interoperability, share lessons learned, and ultimately develop a collaborative strategy to counter violent extremism—our regional partners will play the largest role in shaping their own futures.

As we work to address the propaganda that terrorist organizations use to recruit new followers, we must also address the serious threat that state-sponsored disinformation poses to U.S. national security. Amidst these trends in the information environment, it is more critical than ever that the U.S. Government has a comprehensive, whole-of-government approach to strategic communication that supports and harmonizes with our military efforts. In this vein, the Department of Defense works closely with the Department of State's Global Engagement Center (GEC), and we appreciate that Congress has expanded its mandate to synchronize and coordinate the federal government's efforts to recognize, understand, expose, and counter these harmful propaganda and disinformation efforts. Recognizing that information operations will continue to be a force multiplier, we must ensure organizations like the GEC can compete and win in the information environment.

Cyber Operations/Cybersecurity. All of the traditional threats within the Central Region are exacerbated by several challenges in the cyberspace domain. The global nature of cyberspace means it has no legal boundaries, challenging our legal system

and ability to deter threats or respond to contingencies. We have an adaptive enemy who has proven creative in the information environment.

Based on the speed of technological evolution, attackers in the cyberspace domain have an advantage over defenders. Worse, friendly capabilities can be co-opted by adversaries at a scale and ease greater than in other domains. Consequently, small groups can exercise state-like powers, while a state actor can have tremendous impact. Defenders must expend a disproportionate amount of resources to protect multiple avenues of attack on many different networks and resources.

Integrated Operations with Interagency Partners. Whole-of-government solutions are critical to resolving the complex problems in the Central Region, and we strive to balance our own authorities and resources with our interagency partners' unique capabilities, expertise, and authorities. Our embassy country teams across the region are doing an incredible and critical job providing nuanced information, recommendations, and support for military operations, and senior embassy leadership is integral to facilitating our access to senior foreign leadership. We strive to ensure that our military activities in the AOR reinforce our embassy colleagues' diplomatic engagements in order to mutually advance national security priorities. The Department of State and United States Agency for International Development (USAID) have been invaluable partners from the inception of combat operations in Iraq and Syria to efforts focused on consolidating hard fought gains. As Secretary Tillerson mentioned in his recent remarks at Stanford, "The United States has had diplomats on the ground in affected areas working with the UN, our partners in the Global Coalition to Defeat ISIS, and various NGOs. We will continue to devote personnel and resources to stabilization efforts." In partnership with USAID, CENTCOM has been heavily involved in the conduct of foreign humanitarian assistance and foreign disaster relief operations across the region. Steady-state foreign humanitarian assistance activities are a key security cooperation tool that enhance our BPC efforts and improve Department of Defense visibility, access, and influence while addressing critical humanitarian needs. We request your support of the Administration's annual OHDACA funding request to allow us to continue these important engagement activities.

Counterdrug-funded train and equip programs have become increasingly important in the CENTCOM AOR. We work with our interagency partners in the region to reduce drug trafficking. This is most evident in the Central Asian states, where a large part of CENTCOM's security cooperation activities provide counter-narcotics support. We routinely send additional manpower to embassies in the region to assist them in executing counter-drug programs that include infrastructure improvements, communications equipment, and training in the latest technology such as scanners and ground sensors. Together this builds an effective capability to stem the flow of illicit trafficking in narcotics, weapons, and persons. For example, the Regional Narcotics Interagency Fusion Cell (RNIFC) in Bahrain continues to facilitate the maritime interdiction of heroin and weapons emanating from the Makran Coast of Pakistan, by providing intelligence support to Allied naval partners.

We are also working closely with the Drug Enforcement Administration (DEA) and Department of Justice (DOJ) to provide counter-threat finance, counter-facilitation, and counter-procurement support to United States Forces-Afghanistan's reinvigorated counter-threat finance cell. Continued linguist support and law enforcement training for Afghan DEA mentored units is critical to receiving time-sensitive information from the DEA-sponsored judicial wire intercept program. We will also participate in the Department of Treasury-led Terrorist Financing Targeting Cell in Saudi Arabia. This initiative is part of a larger Saudi-led GCC effort to counter violent extremism in the Arabian Peninsula and throughout the Central Region.

In the past year, we have also seen the effective expansion of our Department of Defense Rewards program, which allows for our IA partners to incentivize sources that deliver information, at great risk, that result in increased force protection or counter-terrorism kinetic strikes.

A key component of our working relationship with the IA is the exchange of personnel; representatives from eight U.S. Government departments and agencies reside within the CENTCOM Headquarters, a majority co-located in our Operations Directorate's Interagency Action Group (IAG). We sincerely appreciate the provision of high-quality personnel to support CENTCOM operations. Reciprocally, we have embedded personnel within the headquarters of several USG partners. These embeds provide support to the gaining organizations and facilitate collaboration on mutually supportive IA objectives. Embeds also allow us to maintain visibility and coordinate activities across our "seams" with EUCOM, PACOM, and AFRICOM.

Coalition Partners. A unique characteristic of CENTCOM remains the presence of 49 nations at our headquarters in Tampa. Over the last 15 years, the composition, task, and purpose of the national representation has changed based on security

trends, ongoing operations, and our partner engagement strategy. Each nation is represented by a Senior National Representative, and most nations have additional officers that regularly synchronize with their counterparts in the Command staff, creating an integrated, coalition-centric approach to our operations.

Many nations consider counter-VEO operations a focal point for their efforts. We capitalize on this extraordinary access to our partners to facilitate information sharing, interoperability, operational support, and force generation. Our co-location with SOCOM in Tampa also enables us to capitalize on economies of scale and synergies between our respective commands and coalition partners.

In spite of the longevity of the Coalition, the current environment of fiscal austerity may inhibit our ability to sustain it at an optimal level of performance. Additionally, the lack of national-level intelligence sharing agreements often hinders the timely and comprehensive communication of information. Our classified networks are largely unavailable to our partner nations and inhibit our ability to integrate operations, often requiring costly and labor-intensive solutions to overcome.

However, utilizing a coalition-centric approach necessitates a paradigm shift and a deliberate acceptance of risk in order to foster an environment of reciprocal information sharing. We have an opportunity to sustain momentum in the global campaign against ISIS and other VEOs while continuing to refine the whole-of-coalition approach. Opposition to violent extremism provides unique alignment of national interests and can increase trust, understanding, and cooperation on other critical issues. If we can sustain an enduring coalition, we will be able to deal with persistent conflict in the region and be postured for response when necessary. Our lessons learned can inform departmental and national strategies for attaining increased levels of integration with our partners.

CONCLUSION

Given the many forces driving change and uncertainty in the region, U.S. commitment to the CENTCOM area of responsibility is more important now than ever. Recent experience has shown that a precipitous withdrawal of support, before conditions for stabilization have been set, can lead to catastrophic results. We have also learned that a modest commitment of resources, applied steadily and consistently over time, and in a predictable fashion, can assist our partners in managing change, adjusting to new threats, and building their own capacity to act. This has the additional benefit of lessening our own requirements in future contingencies and building our reputation as a reliable partner. Working "by, with, and through" our allies and partners allows us to multiply the effect of relatively modest commitments to ensure this crucial and truly "central" region never again requires a mass deployment of United States Forces. We will retain the necessary American military presence in the region to protect the Homeland from terrorist attack, preserve a favorable regional balance of power, and achieve our strategic objectives and interests found in our national strategies.

CENTCOM remains *the only geographic Combatant Command executing Active combat operations.* In the last year, we have made great strides toward defeating ISIS. This year we will shift our focus to the South Asia Strategy in order to push OFS toward a successful conclusion, while consolidating the gains we have made against ISIS, supporting our political and security objectives in the Gulf and Levant, and countering Iran. We must continue to degrade and destroy VEOs that threaten the safety of our citizens and partners by pursuing ISIS across the Central Region. We will continue to counter expansionist regional powers and inappropriate nuclear ambitions by developing strong allies and building peace through strength.

We remain mindful that *ours is a team effort* and that success in the complex Central Region requires that we work together. This applies not just within the command but with our fellow Combatant Commands, our Component Commands, our established combined/joint task forces, the Central Region's 18 country teams, and the agencies and organizations of the United States Government which have continued unwavering support over the almost 2 decades of persistent conflict. Our deliberate and close relationships with the U.S. Department of State, USAID, the U.S. Department of Treasury, the Defense Logistics Agency, the Defense Threat Reduction Agency, the Defense Intelligence Agency, the National Security Agency, the Central Intelligence Agency, the Federal Bureau of Investigation, and the Joint Improvised Explosive Devise Defeat Organization have paid enormous dividends in the pursuit of shared national goals and objectives. We look forward to continuing to work with them and others on behalf of our nation. Further, we continue to benefit from our allies in the region, who support the CENTCOM headquarters with more than 200 foreign military officers from 49 nations—all of whom are a part of the success of CENTCOM, and we are grateful for their partnership.

In all of this, the outstanding men and women who comprise the United States Central Command are our finest and most precious resource. The world class CENTCOM team—which includes more than 90,000 soldiers, sailors, airmen, marines, coastguardsmen, and civilians stationed throughout the CENTCOM area of responsibility—is highly-skilled, motivated, and stands ready to do whatever is necessary to accomplish the mission. They continue to make great sacrifices and contributions to ensure the command meets our strategic objectives and protects our nation's interests. We must ensure they have everything they need to do their jobs as effectively and efficiently as possible. This includes ensuring a safe environment for all our personnel, regardless of their race, gender, creed, or religion.

We are also keenly aware and grateful for the sacrifices made by our families. They are vital members of our team, and we could not complete our mission without them. They, too, make important contributions and tremendous sacrifices each and every day in support of us and on behalf of the Command and a grateful nation.

CENTCOM: *Prepare, Pursue, Prevail!*

Senator INHOFE. Thank you, General Votel.

General Waldhauser?

STATEMENT OF GENERAL THOMAS D. WALDHAUSER, USMC, COMMANDER, UNITED STATES AFRICA COMMAND

General WALDHAUSER. Senator Inhofe, Ranking Member Reed, distinguished members of the committee, thank you for the opportunity to update you on the efforts of the United States Africa Command.

I am also honored to be here today with General Votel and discuss many of the concerns we share between CENTCOM and AFRICOM, including countering violent extremist organizations.

I would like to begin this morning by remembering the soldiers and sailor we lost on the continent during operations this past year. I also want to share my respects for the loss of our African partner forces who, during their efforts in the fight against extremism, gave the ultimate sacrifice this past year as well. We honor their commitment, service, and dedication to duty, and I offer my sincere condolences to the families of our fallen United States comrades and those of our African partners.

Senator Inhofe, I have completed my review of the Niger investigation and forwarded the report to the Secretary of Defense through the Chairman of the Joint Chiefs of Staff. Once the Secretary completes his review and after the families have been briefed, I intend to provide a comprehensive and detailed account of the investigation to you as soon as practicable.

This morning, I would like to talk to you about AFRICOM's strategy for the continent and update you on our priority regional efforts.

The United States interests in Africa are reflected in our mission statement. AFRICOM with partners strengthens security forces, counters transnational threats, and conducts crisis response in order to advance United States national interests and promote regional security, stability, and prosperity in Africa. Our mission statement deliberately highlights the importance of "with partners."

Following up on this point, very few, if any, of the challenges on the African continent can be resolved through the use of exclusive military force. Accordingly, AFRICOM's first strategic tenet underscores our military activities and is designed to support and enable United States diplomatic and development efforts. We can create time and space for governments to establish effective and account-

able governance while fostering conditions for economies to develop.

Our second theme describes our strategic approach of by, with, and through. This framework emphasizes our main effort to build the capacity of African partner defense forces to credibly provide for their own security. While African nations have enormous potential, they are often challenged by instability and exploitation stemming from the disruption caused by violent extremist organizations, or VEOs. These VEO groups take advantage of vast ungoverned spaces and recruit from populations lacking economic opportunities.

We approach these security threats through our third strategic principle of keeping pressure on the networks of VEOs, such as Al Shabaab, ISIS, al Qaeda, and Boko Haram, in order to mitigate their destabilizing influence. At the same time, we remain postured and ready to respond to contingencies and to protect U.S. personnel and facilities on the continent.

These strategic themes and AFRICOM's approach are aligned with the national level guidance. In accordance with the recently released National Defense Strategy and in the context of changes in the operating environment, we are updating our strategy and theater campaign plan to reflect the guidance provided by the Secretary of Defense.

Turning now to our regional efforts, I would like to describe for you some of the challenges we face each day on the continent.

In East Africa, AFRICOM's contributions are part of an international commitment to help Somalia implement their recently designed national security architecture. Al Shabaab remains a threat to Somalia and the region, as demonstrated by their October 2017 bombing in Mogadishu that killed over 500 people. The challenges facing the federal government of Somalia are enormous. Nevertheless, they continue to slowly make progress with a long way to go before they are prepared to secure their own territory with international partners and organizations, including the African Union and the European Union, AFRICOM's kinetic and capacity building efforts to assist the federal government of Somalia with the implementation of their comprehensive approach to security sector reform.

In North Africa, Libya remains politically and militarily divided with leaders and factions vying for power ahead of potential elections later this year. In close cooperation with the United States embassy's Libyan External Office, located in Tunis, and as part of the international effort, AFRICOM supports diplomatic objectives for political reconciliation. We will continue to work with the UN-established [United Nations] government of national accord and maintain pressure on the ISIS, Libya, and al Qaeda networks in that country.

The Sahel refers to the Sahara to Savannah Transition Belt spanning the broadest part of Africa from the Atlantic Ocean to the Red Sea. AFRICOM supports multinational efforts in the western Sahel and in the nearby Lake Chad basin region of West Africa. We provide training, advice, and assistance to the G5 Shahel countries and the multinational joint task force in order to help them contain violent extremism and secure their borders.

In conclusion, the continued progress on the continent with our partners reflects dedicated efforts by the men and women of AFRICOM. I am proud to lead these professionals who have built strong and trusting relationships with the United States interagency and with our international community in order to foster the security, stability, and prosperity on the African continent.

On behalf of the servicemembers, civilian employees, and families of the United States Africa Command, thank you for the opportunity to be with you this morning, and I look forward to your questions.

[The prepared statement of General Waldhauser follows:]

PREPARED STATEMENT BY GENERAL THOMAS D. WALDHAUSER

INTRODUCTION

Chairman McCain, Ranking Member Reed, distinguished members of the committee, thank you for the opportunity to update you on the efforts of United States Africa Command to protect and promote United States vital interests in Africa. At the outset, I want to remember the soldiers in Niger and Navy SEAL in Somalia we lost during operations in the past year. These brave men epitomize the United States Africa Command standard to which we all strive in the service of our country. I offer my sincere condolences to the families for their losses. I have reviewed the contents and signed the results of the Niger investigation, which are currently with the Chairman and the Secretary of Defense. Upon completion of the briefings to the families, our intent is to provide a full and comprehensive briefing to this committee as soon as practical. I also want to recognize all the families who stand with us and support the United States Africa Command mission across the continent. On any given day, up to 7,200 United States uniformed personnel, Department of Defense civilians, and contractors are in Africa representing all services, career fields, and specialties, protecting our national security and working tirelessly to tackle the many challenges on the African continent. Since I last spoke with this committee, the United States Africa Command team has made significant progress with our United States-Africa strategy and with building the defense capacity of our African partners. I am truly honored to lead this team and its efforts in a very dynamic strategic environment.

In 2008, United States Africa Command was established as the first fully integrated interagency combatant command; its purpose was to foster United States long-term, security engagement in Africa. As we commemorate our 10 year anniversary, United States Africa Command continues to enhance the security and stability of Africa and its people. While our area of responsibility covers 53 countries with complex and varied issues, our mission is clear: *United States Africa Command, with partners, strengthens security forces, counters transnational threats, and conducts crisis response in order to advance United States national interests and promote regional security, stability, and prosperity.*

African nations—their people, their increasing appetite for democratic principles, their growing economic impact and potential in global markets—remain an enduring interest for the United States. United States Africa Command supports our African partners in building the capability and the capacity to develop local solutions to radicalization, destabilization, and persistent conflict. By making targeted investments and maintaining strong partnerships, we can set the basic security conditions needed for good governance and development to take root. Africa, our allies, the United StatesUnited States, and the world stand to benefit from a secure, stable, and prosperous Africa.

To achieve this end state, the United States must remain engaged in Africa. In the long term, United States interests in Africa are best served by stable nations with effective, accountable governments, well-trained and disciplined militaries, and growing economies. None of Africa's challenges can be resolved through the use of military force as the primary agent of change. Therefore, our first strategic theme is that United States Africa Command activities directly support United States diplomatic and development efforts in Africa. Working with our interagency partners—primarily the Department of State and United States Agency for International Development (USAID)—is a core tenet of our strategic approach in Africa. In addition, United States Africa Command works alongside the African Union, the European Union, regional African economic and security communities, and the United Na-

tions. Together, to provide alternatives to those who might otherwise be attracted to extreme ideologies, we work to develop government accountability, increase education opportunities, and develop strong economies. Further, to professionalize security forces, United States Africa Command provides human rights training to make forces more accountable to the people and lessen the abuses and drivers of radicalization among the civilian populations. Only by partnering with interested stakeholders can long-term U.S. strategic goals be achieved.

United States Africa Command's second strategic theme is our focus on the By, With, and Through framework. This is a strategic approach that emphasizes U.S. military capabilities employed in a supporting role, not as principal participants in armed conflict. Security operations are executed almost exclusively by the partnered security forces. United States Africa Command works with partnered security forces based on their operational needs. The vital objectives of the United States and the partnered nation are achieved through a cooperative relationship in which United States Africa Command plays a supporting role. African leaders tell us how important it is to develop "African solutions to African problems." The framework of *By, With, and Through* recognizes the importance of partner ownership, which in turn, fosters enduring relationships.

STRATEGIC ENVIRONMENT

African agriculture, financial services, manufacturing, and construction are promising sectors attracting international trade and investment. The United States, therefore, is not the only prospective partner in Africa. We seek constructive, results-oriented relationships with other foreign interests who wish to develop Africa's infrastructure and tackle humanitarian and security issues. We must, however, be aware of interests that run counter to our own, as a larger number of external actors take a great interest in Africa. Though some of their actions contribute to Africa's infrastructure and defense, some of these actors are impeding the continent's long-term stability, economic growth and financial independence. Moreover, external actors may diminish United States influence by undermining our development and diplomatic efforts in Africa, and we share this message with our African partners during all levels of engagement. Nonetheless, as the strategic environment becomes more crowded and competitive, our engagement with external actors, like China and Russia, will continue with an open and clear discussion of intersecting interests and differences.

Extremes in poverty, limited infrastructure, predatory governance, inadequate health care, and in many cases, violent ideology, exist throughout Africa juxtaposed with enormous economic potential and strategic opportunity. This volatile environment creates instability and uncertainty and allows violent extremist organizations (VEOs) to grow and recruit from disenfranchised populations. Keeping military pressure on this VEO network is our third strategic theme. This cycle of disenfranchisement and recruitment feeds extremist movements that aspire to spread their violent ideology. For instance, a youth population with significant unemployment and who are being harassed by predatory and rights-abusing governments and security forces create the perfect hotbed in which to garner ideological support and recruit fighters who will target our partners, allies, and U.S. interests. VEOs also utilize existing illicit networks to move drugs, weapons and persons across the continent. They foment fear and distrust which undermine governments, and when combined with the despair caused by lack of hope for the future, provide for VEO expansion. These VEOs are a significant threat to our partners, allies, and U.S. interests on the continent.

Conflict, instability, and lack of economic opportunity in multiple regions across the continent lead to large numbers of internally displaced persons (IDPs), refugees, and migrants. According to the United Nations High Commissioner for Refugees, Africa has approximately 18.5 million people categorized as refugees, asylum seekers, IDPs, and stateless persons as of January 2017. The continent hosts 30 percent of the world's displaced people, more than any other continent. In 2016, the Organisation for Economic Co-operation and Development (OECD) estimated there are more than 1.6 million new asylum requests worldwide, and of these, almost 1.2 million were registered in European countries. In Africa, many countries do not have the infrastructure necessary to absorb large influxes of refugees and displaced persons. These large numbers may destabilize already tenuous social, economic, and political institutions and further stress poor populations.

In Africa, weak and ineffective governance is the leading cause of state fragility. According to the 2017 Fund for Peace "Fragile State Index," 15 of the 25 most fragile countries in the world are in Africa. While governance is not the primary mission of United States Africa Command, we recognize building legitimate defense institu-

tions is critical for African Governments that prioritize the security of their citizens over that of the state. Therefore, we work in concert with the Department of State, and other partners, to develop human rights-respecting security forces and inspire them to pursue military professionalism in their own institutions. For example, this past November, we hosted an African Senior Enlisted Leader conference to discuss the importance and value of enlisted leadership in the military ranks with non-commissioned officers (NCOs) from nineteen of our African partners. Empowering these NCOs is crucial to strengthening partner militaries, as enlisted force leaders are closest to the soldiers in the field and can relate to them in ways difficult for officers to match. For example, enlisted force leaders work to get soldiers paid on time, remove and reduce corruption, and continue to act as positive role models within their community.

United States Africa Command conducts Military Information Support Operations (MISO) to advise and assist partners in countries such as Kenya, Niger, and Nigeria to enable their counter-VEO messaging and enhance their security operations. MISO empowers the government's ability to increase its outreach to the population and counter adversarial messaging.

COMMAND APPROACH

Theater Strategy

Transnational VEOs are not only the most direct threat to United States interests in Africa, but also a threat to stability across the continent. Just as the threat on the ground evolves, so too does our Strategy. United States Africa Command utilizes the National Security, Defense, and Military Strategies, Guidance for the Employment of the Force, and other U.S. policy documents to guide our current Strategy. The 2017 National Security Strategy (NSS) states that the United States seeks to partner with African states that exercise sovereignty over their whole territory, are integrated into the world economy, able to provide for their citizens' needs, and capable of managing threats to peace and security. To that end, United States Africa Command will continue to search out willing and capable partners, strengthen existing partnerships, and form new relationships that promote these goals. The 2018 National Defense Strategy (NDS) reinforces United States Africa Command's approach of "working by, with, and through" local partners to degrade VEOs, interdict transnational extremist and criminal activity, and increase the institutional capacity of partners to do so with limited foreign assistance. Increasing partner capacity cannot be limited to training and equipping front-line forces. In concert with interagency and international partners, we must also contribute to building the institutions that fortify recruiting, training, sustaining, and fielding of these forces. Such institutions create the stable security environment to allow democracy and development to blossom, which diminish the factors that allow violent extremism and criminality to grow. Put simply, a sustainable solution to instability in Africa involves supporting national institutions and regional organizations willing and able to address their own security challenges.

In order to create the time and space necessary for this long-term effort, we maintain pressure on transnational VEOs. Our primary effort in this aspect is to execute programs with more capable partners. Working directly with these partners, we target VEOs who pose an imminent threat to partner, allied, and U.S. interests.

United States Africa Command focuses on cost-effective solutions that leverage interagency and international support as we continue our decisive effort of building the capacity of and strengthening relationships with African partners, primarily executed through security cooperation activities. To support these efforts, our fiscal year 2019 Budget Request includes appropriate resources—notably, Intelligence, Surveillance, and Reconnaissance (ISR) assets.

Theater Posture

To set the African theater, United States Africa Command's posture plan is designed to secure strategic access to key locations on a continent characterized by vast distances and limited infrastructure while adhering to Department of Defense guidance to maintain a tailorable, flexible, small, and expeditionary presence. Our posture network allows forward staging of forces to provide operational flexibility and timely response to crises involving United States personnel or interests without creating the optic that United States Africa Command is "militarizing" Africa.

In Djibouti, Camp Lemonnier is an enduring U.S. military installation that serves as a vital hub for Security Force Assistance, operations, and logistics for five combatant commands: United States Africa Command, U.S. Central Command, U.S. European Command, U.S. Special Operations Command, and U.S. Transportation Command. Camp Lemonnier provides, operates, and sustains superior service in

support of combat readiness and security of ships, aircraft, detachments, and personnel for regional and combatant command requirements; and enables operations in the Horn of Africa while fostering positive United States-African relations.

Over the course of the last 2 years, United States Africa Command has endeavored to improve our distribution network. In January 2018, we initiated processes and procedures to establish the West Africa Logistics Network. This network will position right-sized aircraft on the continent to facilitate distribution from a primary logistics hub to support locations throughout West and Central Africa. That will vastly improve support to approximately 1,800 personnel supporting 11 named operations across a 13-nation region, roughly the size of the Continental United States.

Combatant Command Campaign Plan

To contribute to "a secure, stable, and prosperous Africa," we focus on building partner capacity, protecting United States personnel and facilities, and maintaining U.S. access. This approach complements the efforts of our allies, such as France and the United Kingdom.

United States Africa Command currently operates along five Lines of Effort (LOEs), which focus resources and operations throughout the continent: 1) Develop Security and Stability in East Africa; 2) Degrade VEOs in Sahel and Maghreb Regions / Contain Instability in Libya; 3) Contain and Degrade Boko Haram and ISIS–West Africa; 4) Interdict Illicit Activity in Gulf of Guinea and Central Africa; and 5) Build Peace Keeping / Humanitarian Assistance and Disaster Relief (HADR) capacity of African Partners.

Each LOE links multiple tasks and objectives to achieve a desired end state. While each geographical region presents different challenges, the overall message that "a secure, stable, and prosperous Africa is an enduring American interest" remains our focus. The LOEs help translate our strategy into an operational approach while allowing flexibility to address each region's specific needs. This flexibility is key as we review and adjust our campaign plan. Over the next few months, we will work with partners, allies, and the interagency to review and then release an updated Combatant Command Campaign Plan in 2018, covering fiscal years 2019–23.

Our strategy features a whole-of-government approach utilizing the specific skill sets of the Department of State, USAID, Federal Bureau of Investigation, Department of Homeland Security, Department of Justice, and other interagency partners to synchronize and complement our approach. Many partners embed a liaison cell within United States Africa Command to support our strategy, a method we endorse and expand as needed. Additionally, United States Africa Command understands legislation generally consistent with a proposal outlined in the President's 2019 Budget and the National Security Strategy has been introduced to create a new development finance institution. We look forward to working with this new agency as well.

East Africa

For East Africa, the desired end state is one in which VEOs are not able to destabilize Somalia or its neighbors or threaten the United States Homeland, United States persons, or our international partners and allies. Accordingly, the desired end state includes transitioning security responsibility from the African Union Mission in Somalia (AMISOM) to the Federal Government of Somalia (FGS) and Somalia's Federal Member States (FMS) so the central and regional governments ultimately secure their own territory, neutralize al-Shabaab, and interdict illicit flows of arms, drugs, money, natural resources, and persons.

In Somalia, the 2017 election of President Mohamed Abdullahi Mohamed, known as President "Farmajo," proved to be a strategically significant change in the region. Historically, Somalia has been plagued with drought, extreme food insecurity, and decades of political, economic, and military unrest. President Farmajo inherited clan-based conflicts, al-Shabaab's ongoing violent extremism, and the emergence of ISIS–Somalia.

However, in the short time since taking office, President Farmajo has re-aligned the Somali National Army security sectors to coincide with the borders of the Somali Federal Member States. He also utilized 2017 as a year of planning while gathering local, regional, and international support. At both the May 2017 London Conference and the December 2017 Mogadishu Conference, President Farmajo reiterated his administration's commitment to implementing Somali national security architecture in 2018 and refocused the AMISOM transition into a conditions-based turnover rather than a time- or date-based transition. International partners, including the United States, are committed to Somali progress leading to well-trained Somali security forces.

President Farmajo fully supports U.S.-led train and equip missions, as well as U.S. kinetic efforts in support of the FGS. President Farmajo recognizes that Somalia's security cannot be manufactured by international partners but must come from Somali citizens in towns and villages across the country. President Farmajo supports a federal form of government, with power and security responsibilities shared among federal member states and local forces; he also supports military accountability to the civilian population. President Farmajo has demonstrated a willingness to integrate federal, regional, and local interests into his administration and encourages defections from al-Shabaab. Also assisting in Somalia is a coalition of international partners, such as the European Union, the African Union, the United Nations, the United Kingdom, Turkey, and the United Arab Emirates.

Even with President Farmajo's forward-looking Somalia strategy, al-Shabaab remains a threat to the region, as demonstrated by the devastating October 2017 vehicle-borne IED attacks in Mogadishu that killed over 500 people. While some high-profile defections have occurred, only a small number of fighters have actually defected. In addition, Islamic State of Iraq and ash-Sham (ISIS)-Somalia remains isolated in northern Somalia with small, limited capabilities. By the end of 2017, sustained conflict and prolonged food insecurity drove more than two million people to flee their homes in Somalia. Though there are some improvements in 2018, unfortunately, forecasted drought conditions will likely lead to continued poor harvests and reduced food security in Somalia, sustaining and contributing to population displacement. As a component of our whole-of-government efforts, and building on longstanding and large humanitarian investments, in 2017, USAID signed an important development assistance agreement with Somalia, supporting that country's efforts to achieve stability through good governance, economic recovery, education and health. USAID has invested $400 million in development assistance in Somalia since 2011. Delivered over a 5-year period, the funds will support democracy, stabilization and governance, education, and economic growth activities to achieve economic recovery and resilience for Somalia.

With the full support of the Federal Government of Somalia, United States Africa Command maintains pressure on the al-Shabaab and ISIS–Somalia networks and seeks to accelerate the delivery of training and equipment to the Somali Federal Member States. Our joint Department of Defense-Department of State Security Force Assistance efforts in Somalia have built the 1st Danab Advanced Infantry Battalion, a combat-tested unit at the leading edge in southern Somalia. Furthermore, with the Department of State and the Defense Threat Reduction Agency's (DTRA) Joint Improvised Threat Defeat Organization (JIDO), we are working to improve the security posture in Mogadishu and mitigate the destabilizing effects of vehicle-borne IED attacks in the city.

Our relationship with Djibouti is strong, though we are carefully monitoring Chinese encroachment and emergent military presence. In November, Camp Lemonnier, Djibouti hosted a commemorative event celebrating the Africa First Initiative and its contract awardees, which President Ismail Omar Guelleh attended as the honorary guest. This long-term initiative to acquire local goods and services for United States military members helps boost African businesses. Camp Lemonnier remains the only enduring United States Military installation in Africa, and as such, a key component of the command's regional readiness. Furthermore, last August, the Chinese opened their first overseas naval base in Djibouti. United States Africa Command views security and access to Djibouti as a top priority. Consequently, we continue to monitor this development to ensure U.S. interests are not deterred.

In South Sudan, the political climate continues to be volatile. United States Africa Command maintains constant communication with United States Embassy Juba and stands ready to assist them should the situation on the ground necessitate our support. This response capability means the United States can maintain diplomatic and humanitarian presence inside of South Sudan as United States Embassy Juba works to seek an end to one of Africa's largest humanitarian disasters.

Ethiopia remains a longstanding partner and contributes over 4,000 uniformed personnel to AMISOM, further advancing regional peace and security efforts in East Africa.

Other countries in East Africa continue to develop reconnaissance and surveillance capabilities to build their capacity for counterterrorism operations. Kenya and Uganda have deployed tactical unmanned aerial vehicles (UAVs) in their fight against al-Shabaab in southern Somalia. The Kenyans use theirs to identify ambushes ahead of their patrols, and the Ugandans use theirs as artillery spotters against al-Shabaab concentrations. Both countries have seen the value of such capabilities, and Kenya is now investing their own money in additional platforms. Furthermore, as Kenya received guided strike capabilities, we are developing air-ground

integration mentorship programs to optimize the impact of these tools. Both Kenya and Uganda receive helicopters, UAVs, and medium altitude reconnaissance platforms.

North Africa

Turning to North Africa, our four primary objectives in Libya are: degrade terrorist groups who threaten United States interests and threaten to destabilize Libya and the region; avert civil war; support the political reconciliation process towards a unified central government; and assist to curb the flow of illegal migrants into Europe via Libya. Efforts by European allies and international organizations are underway to interdict the illicit flow of arms and drugs flowing into and through of North Africa due to porous borders and under-governed spaces.

In Libya, United States Africa Command continues to support the United States Libya External Office's diplomatic efforts to promote the UN-facilitated Libyan political reconciliation process. Our counterterrorism strategy has allowed time for the political reconciliation process to continue.

Following its late 2016 expulsion from in Surt, ISIS–Libya remains dispersed and disorganized and likely capable of little more than localized attacks. Meanwhile, al Qaeda in the Lands of the Islamic Maghreb (AQIM) in Libya maintains a low profile yet still aims to use illicit means to move fighters and weapons and focuses on building influence within Libya's various extremist groups. The disrupted state of VEOs, however, has not translated into a stable Libya. Libya remains politically and militarily divided, with loyalties shifting based on tribal interests and personalities involved in the struggle for power. Given this turmoil, the risk of a full-scale civil war remains real. We will continue to apply pressure on the ISIS–Libya network, work with the Government of National Accord, and support the international community to consolidate a comprehensive approach to bringing stability and a political settlement to Libya.

In Tunisia, we work to develop Tunisian counterterrorism and border security capabilities. Through programs that build partner capacity, like the JIDO counter-IED awareness program, we have trained and equipped Tunisia's Special Operations Forces. Recently, elements of the United States-trained Tunisian Special Forces airborne battalion successfully engaged a group of terrorists in the Kasserine Mountains, killing a senior ISIS attack planner. On border security, Tunisia is making use of United States-provided mobile ground surveillance radar systems and ISR aircraft to better monitor its border with Libya. Furthermore, the United States-funded border security project managed by DTRA is on track to provide fixed radar and camera coverage of the Tunisia-Libya border in November 2018. DTRA has begun a second radar to extend coverage to the southern portion of the Libya-Tunisia border. This second phase is funded by the German Government and managed by DTRA.

On 31 January 2017, Morocco was admitted to the African Union (AU), more than 3 decades after it withdrew from the precursor Organization of African Unity. This means all African nations are now members of the AU. As the country with the largest Foreign Military Sales (FMS) program within our Area of Responsibility, Morocco has repeatedly demonstrated the ability to operate and maintain advanced United States equipment and seeks to increase interoperability with U.S. and NATO Forces. Morocco's role as a net exporter of security makes it a key partner in the region.

Algeria is another highly capable partner in North Africa, who continues to implement an effective counterterrorism program against local extremist groups. Further, United States Africa Command and the Algerian People's National Armed Forces hold regular dialogues to advance cooperation on shared security interests.

Sahel Region

The Sahel region of Africa is a critical battleground in the fight against violent extremism and jihadist terrorism. The African-led, French-assisted, United States-supported G5 Sahel organization (Burkina Faso, Chad, Mali, Mauritania, and Niger) has established a joint force to combat violent extremism within the region. United States Africa Command is contributing two operational planners to the G5 Sahel Joint Force.

In Mali and adjacent countries, AQIM and its affiliates remain a threat to United States interests and the security of our African partners. Mali's government, rebel groups, and pro-government militias are struggling to implement the 2015 Algiers peace agreement. We remain committed to assisting the French-led operations to degrade VEOs and to build the defense capacity in Mali and its neighbors.

Niger is at the crossroads of regional instability: Boko Haram, ISIS–West Africa, ISIS–Greater Sahara, Jamaat Nursat al-Islam wal-Muslimin (JNIM), and affiliated

extremist groups in the region; spillover from the Mali conflict in the west; instability emanating from Libya to the north; and a large flow of would-be migrants to Europe who converge on Agadez en route to Libya. Moreover, Niger faces internal governance and development issues with rapid population growth, environmental degradation, lack of economic opportunity, and stressed infrastructure. While the Department of Defense has increased Title 10 support to Nigerien forces, the United States military does not have a direct combat mission in Niger. Instead, United States Africa Command has provided training and equipment to the Nigerien Armed Forces and through the Trans Sahara Counter Terrorism Partnership since 2005, and advises and assists certain Nigerien combat units. Additionally, at the request of the Government of Niger and the Nigerien Armed Forces, United States Africa Command is establishing an expeditionary, contingency support location in Agadez. This will be a Nigerien base from which we will fly ISR assets to better identify and monitor threats in the region. Furthermore, Niger will host Exercise Flintlock 2018, a multi-national event among African, allied, and United States forces to develop capacity and collaboration between security forces to protect civilian populations. The fight against terrorism is a long-term effort, and Niger has shown itself to be a dedicated partner.

In Burkina Faso, United States forces are supporting intra-theater mobility operations. Additional security assistance initiatives in Burkina Faso include training and equipping army companies dedicated to counterterrorism operations and logistics. On 2 March 2018, our partners sustained devastating attacks on the Burkinabe Army Headquarters and on the French Embassy, and we remain in steadfast support to their efforts.

In Chad, United States forces conduct Security Force Assistance focused on logistics, sustainment, and maintenance with the Chadian Special Anti-terrorism Group (SATG). Key programs include counter-Boko Haram equipment (e.g. armored trucks, fuel, and radios), ISR aircraft, and command and control enhancements. In addition, U.S. forces are building intelligence and counter-IED capabilities to augment Chad's counterterrorism efforts. We trained and equipped the National Army with sixty light armored vehicles and provided fuel allotments to support border surveillance as well as counter extremists operations in the Lake Chad Region. In 2017, the Chadian National Army used some of these vehicles to assist in operations to contain ISIS–West Africa in Nigeria, decreasing attacks into Niger and Chad.

West Africa

Unrest within West Africa is driven by local grievances, corruption and weak governance, human rights violations, and imported religious ideology. United States Africa Command's principal strategic objective in West Africa and the Lake Chad Region is to contain and degrade Boko Haram and ISIS–West Africa. United States Africa Command works with the four Lake Chad Region countries (Cameroon, Chad, Niger, and Nigeria) to build their capacity to ensure Boko Haram and ISIS–West Africa do not threaten partner, allied, or U.S interests.

The Multinational Joint Task Force (MNJTF), composed of forces from Benin, Cameroon, Chad, Niger, and Nigeria, coordinates operations and facilitates intelligence sharing. Boko Haram and ISIS–West Africa continue to hold territory and conduct suicide IED attacks, and to varying degrees terrorize local communities, displacing people from their homes. The persistent violence limits the ability of international humanitarian aid organizations to deliver needed assistance. Basic health care, clean drinking water, adequate sanitation, and food supplies are in short supply to the millions of refugees and displaced persons in the area. United States Africa Command supports Department of State and USAID (the United States Government leads) who work closely with the UN and non-governmental organizations to provide humanitarian development assistance, and stability to the region.

Nigeria's capabilities and capacity continue to grow, with intelligence sharing agreements and additional cooperation with United States forces. Nigeria has made arrangements to purchase 12 A–29 Super Tucano light attack airplanes with delivery of the first 8 expected in 2020. Furthermore, President Buhari has encouraged trust in United States-Nigerian interaction. However, challenges remain, as MNJTF partners sometimes fall short of respecting international norms of human rights when dealing with local populations. We are closely monitoring reports of the armed forces of Lake Chad Region countries using heavy-handed counter-insurgency techniques and which have led to additional displacement of civilian populations and reports of forcible return of Nigerian refugees from neighboring countries in violation of international humanitarian principles and refugee-related conventions. We continually remind them techniques such as these not only increase regional fragility by undermining public trust and confidence in the state, but also produce the grievances that fuel support for the enemy. Partner nation fiscal challenges and com-

peting security concerns add additional pressure in the region. Nigeria faces unrest in its southern Delta region, home to its oil fields and oil revenues, piracy in the Gulf of Guinea, and threats by Biafran separatists. As Boko Haram and ISIS–West Africa become localized to northeastern Nigeria, the remaining MNJTF partners have become reluctant to commit resources to what they view as "a Nigeria problem."

United States Africa Command supports the efforts of the Lake Chad Region partners to counter Boko Haram and ISIS–West Africa by providing advisors, intelligence, training, and equipment instead of engaging in direct military operations. In July 2017, United States Africa Command started training and equipping MNJTF-designated units to counter IEDs. Over a hundred MNJTF soldiers are now less vulnerable to IEDs employed by violent extremists. We intend to expand counter-IED training and equipping programs to other affected regions.

Gulf of Guinea and Central Africa

In the Gulf of Guinea, maritime security remains a strategic priority due to its role in global oil markets, trade routes, and the presence of approximately 75,000 American citizens residing in the area. Piracy and other illicit maritime activities threaten development efforts, weaken state security, and rob states of resources required for greater economic growth and more effective governance. Incidents of piracy and armed robbery at sea trended lower in 2017, but continued to threaten maritime trade and offshore hydrocarbon installations.

In addition to the VEO threat throughout Africa, criminal and smuggling networks remain a persistent danger within the Gulf of Guinea and Central Africa. United States Africa Command supports our African partners who work with international and interagency partners to interdict and to disrupt illicit trafficking and smuggling networks that finance trans-national criminal organizations.

United States Africa Command remains engaged with coastal nations and international partners to increase African maritime capacity and willingness to interdict illicit activity in the Gulf of Guinea. We execute the African Maritime Law Enforcement Partnership (AMLEP) and support the Yaoundé Code of Conduct, a strong regional framework for information sharing and operational coordination. In 2017, under the AMLEP, U.S. Coast Guard and Cabo Verde security personnel embarked a Senegal Navy ship for joint patrol operations in Senegal and Cabo Verde waters. This represented the first combined African partner maritime law enforcement patrol hosted from another African partner nation's vessel.

In Central Africa, the Lord's Resistance Army (LRA) used to terrorize isolated populations. Our surge efforts with the African Union Regional Task Force effectively diminished the LRA to a threat that can now be better addressed by local and state actors, in which the Department of State Bureau of International Narcotics and Law Enforcement Affairs and the United Nations Peacekeeping Operations are investing. Now, regional efforts are focused on expanding security in this region by investing in civilian law enforcement agencies to provide more security and address illicit trafficking of minerals, natural resources, narcotics and weapons which fuel violence.

Africa-Wide Capacity Building Efforts

United States Africa Command continues to build the capacity of African partners to respond to crises including infectious disease outbreaks. Most of our engagement with Southern Africa is in this regard. Despite its relative stability, Southern Africa faces economic, social, and environmental challenges that include poverty, crime, social inequality, corruption, and lack of water. United States Africa Command will continue to work closely with our Department of State and USAID partners, providing support and complementing their efforts when requested.

One of United States Africa Command's most valuable implementing partners is the National Guard's State Partnership Program (SPP). These state partnerships' enduring relationships build and improve peacekeeping capacity, disaster management competency, and overall partner readiness. For example, the SPP currently supports the Botswana Defense Force as they build various defense institutions such as an Office of the Inspector General and a Staff Judge Advocate program. Through United States Africa Command's Security Force Assistance, the SPP and other organizations are setting the stage for force development in Botswana. Currently, the SPP pairs 13 African nations with 11 United States states. Several more African countries have requested partnerships, and their requests are currently under consideration. We continue to see great value in the SPP program.

Other programs that build partner capacity include the Global Peace Operations Initiative (GPOI), the African Peacekeeping Rapid Response Partnership (APRRP), and the Women, Peace, and Security (WPS) Initiative. GPOI, managed by the De-

partment of State, works to strengthen the capacity and capabilities of international partners to execute UN and regional peacekeeping operations. Most GPOI partners are in Africa (23), as the program builds sustainable peacekeeping capacity within each country to aid in their participation in UN and regional peacekeeping missions. APRRP focuses on six African partners (Ethiopia, Ghana, Rwanda, Senegal, Tanzania, and Uganda) to allow for deeper investment in rapid response capability. APRRP allows for development of aviation, medical, engineering, and logistical capabilities; command, control, communications, and information systems; and the formation of police units to handle local law enforcement requirements. GPOI and APRRP professionalize partner militaries and security forces through training and equipping and institution building.

United States Africa Command remains committed to aligning capacity building efforts with WPS objectives. WPS integrates a gender perspective in our military activities through two main efforts: 1) staff training and awareness, and 2) integration in the Combatant Command Campaign Plan. For training and awareness, we host "Gender in Military Operations" seminars and provide informative briefings to both United States Africa Command and partner leadership during conferences. WPS concepts are integrated into military-to-military engagements; training on human rights, rule of law, and prevention of gender-based violence; and exercises.

United States Africa Command's whole-of-government approach includes building partners' capacity for responding to disease outbreaks. United States Africa Command Surgeon's Office leads the Africa Malaria Task Force (AMTF) programs through leadership engagements, assessments, and training for 18 African militaries to implement the United States Government's President's Malaria Initiative (PMI) and to support countries' malaria prevention programs. The command's components lead the Africa Partner Outbreak Response Alliance (APORA) that promotes effective military-civilian partnerships in health and security communities to manage emerging epidemics. Based on the initiative's successes, we are establishing professional development and training programs for emergency managers and responders in West Africa at the Kofi Annan International Peacekeeping Training Center in Accra, Ghana.

Implementing Our Approach

United States Africa Command relies on partnerships not only with African nations but also with international, multinational, interagency, and specialized United States units to achieve U.S. strategic objectives. Fifteen of our international partners are embedded within the command staff in the Multi-National Coordination Center (MNCC). United States Africa Command leads and participates in multilateral planning groups for East Africa, North Africa, and the Sahel region, in addition to our component command-hosted senior leader staff talks with their respective component equivalents. In addition, the United States Army's Regionally Aligned Force (RAF) executes a significant share of the Security Force Assistance activities in Africa. Sustained access to the RAF is critical to mission success.

United States Africa Command coordinates and integrates its activities with the Department of State and USAID through the annual Africa Strategic Dialogue in the fall and the Africa Strategic Integration Conference in the winter. Working with the Department of State and other departments and agencies, the Security Governance Initiative (SGI) builds the capacity of civil and defense institutions in six countries, Ghana, Kenya, Mali, Niger, Nigeria, and Tunisia. Additionally, the section 333 authority provided in the Fiscal Year 2017 National Defense Authorization Act assists United States Africa Command in building security force capacity and has been essential in enabling African partners in their fight against home grown extremism.

Relationships with United States European Command and United States Central Command are essential to our mission success. We rely on allies such as France, Germany, Italy, and Spain to project United States Forces out of Europe to support efforts in North Africa, the Sahel, and other location on the continent, and United States European Command helps orchestrate these efforts. We coordinate closely with United States Central Command for shared response forces, as well as shared equities in Egypt, the Arabian Peninsula, and the Gulf of Aden. In 2017, for example, our Exercise Cutlass Express, sought to improve United States military interoperability with the armed forces of eastern African nations and European allies. The exercise was linked with U.S. Central Command's international maritime exercise to build capabilities in the region. Finally, our partnership with United States Special Operations Command (SOCOM)—through Special Operations Command-Africa (SOCAFRICA)—is a vital link in containing and degrading extremism on the continent.

To support the Department of State-led mission to protect U.S. personnel and facilities, United States Africa Command manages rapid-response forces that are flexible and specialized: the Special Purpose Marine Air Ground Task Force-Crisis Response at Moron Air Base, Spain; the Crisis Response Force in Baumholder, Germany; and the East Africa Response Force in Djibouti. Also, when required, amphibious Marine Expeditionary Units offer another layer of reaction forces to protect U.S. personnel and facilities. Finally, United States Africa Command maintains Defense Cooperation Agreements with several African nations—which allow for the forward staging locations enable faster recovery or evacuation of personnel.

United States Africa Command is a supporting effort in the worldwide fight against violent extremism. With regard to resources, we have, historically, been viewed as an "economy of force" area of operations, particularly in comparison to other combatant commands. However, consistent with the National Defense Strategy, we continue to explore efficient and cost-effective ways to make the best use of the assets we are provided. This is best represented by United States Africa Command's limited ISR allocation. With personnel recovery and casualty evacuation, contracted search and rescue assets are an expensive but necessary substitute to our limited capacity. Moreover, most African partners neither have the organic assets nor the funding to assist with personnel recovery or casualty evacuation missions. While United States Africa Command will continue to meet its mission with the assets provided, we will also continue to find ways to help protect personnel and enhance mission success.

CONCLUSION

In summary, ten years ago, at the inception of United States Africa Command, many were skeptical of a United States combatant command for Africa. However, over the past decade, United States Africa Command professionals have built strong and trusting relationships with many African nations, key partners, and organizations. Today, we continue with our partners to contain and degrade transnational threats, protect United States personnel and facilities, prevent and mitigate conflict, and build African partner defense capability in order to promote regional security, long-term stability, and prosperity. In line with the National Security Strategy and National Defense Strategy, United States Africa Command will continue to bolster existing bilateral and multilateral partnerships and develop new relationships to deter or constrain threats to United States interests. We will focus on working by, with, and through local partners to build the capability required to counter violent extremism, human trafficking, transnational criminal activity, and illegal arms trade. As a command, we will apply small, wise investments toward "African solutions to African problems," promoting United States interests and protecting the U.S. Homeland. I am honored to lead our servicemembers, civilian employees, and families of United States Africa Command. They inspire all of us every day as "we go further together."

Senator INHOFE. Thank you, General Waldhauser.

Just less than a month ago, Senators Ernst, Rounds, and Sullivan and I spent quite a bit of time in the South China Sea seeing, witnessing firsthand what China is doing there. They talk about reclaiming land. I suggest it is not reclaiming land because there is no land to reclaim. It is creating land. While they have been doing this for some time, it has kind of gone unnoticed. They are up now to over 3,000 acres that they have created, all staffed with nothing but military staff in there. So obviously, it concerns a lot of people, and a lot of people in the region. In fact, a lot of our allies in the region look at China as someone more significant than we are because they do not see that type of thing from us.

Now, I know this is not your AOR [Area of Responsibility], General Waldhauser. But recently—and you stated in your opening statement there are requests for a presence in Djibouti. This is very much of a concern. Djibouti is where we have had our marines for quite some time. It is an area that has control over the entrance in the Red Sea and ultimately the Suez Canal. So I am very much concerned about this, and you are too. You said at the House Armed Services last week, "If the Chinese took over that port, then

the consequences could be significant." Well, if China is successful in taking over the port of Djibouti, could they use their control to threaten United States access and our broader freedom to have navigation interests in that region like the Red Sea and Suez Canal?

General WALDHAUSER. Senator Inhofe, thank you very much for the question.

Although I am not an expert on port operations, I can tell you a few things about Djibouti that may lend some context to the question.

Within the confines of the Djibouti port, there are five activities, two of which are run by the Chinese, obviously, their Chinese naval port for the facility there, and then they have control over what is called a multi-purpose port, which essentially offloads containers. There are three other pieces to the port, one of which is a fuel pier, which an Emirati company owns. Then there is this container pier, which is what has been discussed about the Djiboutian takeover in the past couple of weeks. Then there is what is called an old port where our ships also berth in order to pick up supplies and the like.

The Djiboutians annulled a contract that they had with the Dubai Ports World here last week, and they essentially took control of that port. In discussions with our key leadership in the area and with the Secretary of State, who was there this past week, the Djiboutians indicated that they will run that port for the next 6 months and then determine where they will go in terms of sale or in terms of whether they will keep control of that port.

The container port, as I described—basically all of the containers that come through there in Djibouti, whether it is spare parts, whether it is provisions, anything that comes in Djibouti comes through that port. That port is used quite a bit.

We also use the fuel port quite a bit. Between October of 2016 and October of 2017, there were 115 ships that came in there to refuel. The fuel also goes to the base in Djibouti to refuel airplanes and the like.

Senator INHOFE. That is a significant area there. I am running out of time here, but that is what I wanted to get into the record.

One area—in fact, it was Admiral Harris who called this to our attention. In some of the areas where we have done this IMET [International Military Education and Training] program, which I have always been very fond of and I think both of you have, they are seeing that China is going after our IMET program in that area. Are you seeing any of this in Africa, on the continent of Africa? Because we had worked extensively on the IMET program down there.

General WALDHAUSER. So it is unclear. It is difficult to get data in terms of China and the IMET program in Africa. On average, the National Defense University in China graduates about 100 or so foreign students a year, some of whom are obviously from Africa. They usually come from about 70 or so countries.

By the way, we in the United States—we have about 850 officers from China who go—sorry—from Africa who go through various programs, National Defense University seminars and the like, at a cost of about $22 million.

Senator INHOFE. That is good.

Let me do this. For the record, because there is not time to do it now, General Waldhauser, I want you to kind of outline the resources because when we built AFRICOM, it was done without resources, and we know who we depend on in cases when we need those resources. So I would like to get in writing some detail on that.

[The information referred to follows:]

Per SASC and Senator Inhofe's office, "no requirement for USAFRICOM to answer."

Senator INHOFE. General Votel, I know that you have some concerns about China and the efforts that you are seeing in China to project their influence in your AOR. Any comments you want to make about your AOR?

General VOTEL. Senator Inhofe, the thing that I would just highlight is that the activities in Djibouti are not only important to AFRICOM, they are extraordinarily important to CENTCOM. This is certainly one of the key areas where we have strong cooperation and collaboration across our geographic combatant command areas here. So I certainly share General Waldhauser's concerns about what is playing out in Djibouti.

Senator INHOFE. Yes. In your written statement, you also gave some details on that, and you do make a comment, while Beijing claims that both locations support peacekeeping and humanitarian operations—and you go on. I do not know how many people believe that. But it is a great concern to this committee.

Senator Reed?

Senator REED. Well, thank you very much, Mr. Chairman.

General Votel, as I indicated in my opening remarks, consistent with the Secretary of Defense, Secretary Mattis, and General Dunford, do you believe that it is in our national security interests to stay within the confines of the JCPOA?

General VOTEL. I think from my perspective, the JCPOA addresses one of the principal threats that we deal with from Iran. If the JCPOA goes away, then we will have to have another way to deal with the nuclear weapons program. So, yes, I share their position.

Senator REED. Thank you.

With respect to Syria, it is a very complicated situation, and that is an understatement. One issue involves the Kurds. They fought with us very reliably in the Syrian Defense Forces. Now they are moving to assist fellow Kurds against the Turks in Afrin.

It appears that we do not have a policy as to our position vis-à-vis the Kurds within Syria, the Syrian Kurds, and also a longer-term policy as to what do we do. Are we going to have a de facto partition of the country with the SDF, Syrian Defense Forces, guarding that portion? Can you give us some clarity on the policy? I just do not think we have one, to be blunt.

General VOTEL. Senator, we have not operated in the province of Afrin. In our interactions with the Syrian Democratic Forces, they understand that this is an area in which we do not operate and have no intention of operating at this particular point. The concern certainly that we have is that the activities up in Afrin are a distraction to our Defeat ISIS activities right now. There has been an

impact of that. We are addressing that. I think we have got very innovative people and partners on the ground that are working to ensure we keep the focus on ISIS. But I am concerned about the long-term aspects of this.

Senator REED. There is a possibility that the Kurds would gradually leave our efforts in order to protect their fellow Kurdish forces in Afrin. That is a possibility. Is it not?

General VOTEL. We have seen that already, Senator.

Senator REED. Thank you.

General Waldhauser, thank you for your hospitality when I was passing through AFRICOM.

One of the impressions that I received there is that we are keeping some of these forces on their heels by special operations particularly in working with AMISOM [African Union Mission to Somalia] and with local forces, but that the real long-term struggle is building capacity in every way, shape, or form. As I pointed out in my opening statement, the sheer lack of State Department presence, ambassadors in Somalia, ambassadors in Libya, ambassadors in Egypt—is that impairing your ability to get the job done?

General WALDHAUSER. Thank you, Senator Reed, and thank you and your team for taking the time to come through our AOR. It was very helpful and we appreciate your support and concern.

With regard to Somalia, we do two things there primarily. One is the kinetic piece, which we have authorities to strike Al Shabaab targets, and we have done that quite robustly here in the last few months.

Additionally, we have a niche in building partnership capacity. But I also would say that the international community plays a big part in that as well. UAE [United Arab Emirates], Turkey, the UK, and so forth also build this capacity. The key there is that as we talk about AMISOM transition in around the 2020 to 2021 time frame, the Somalian National Security Forces needs to be at a place where they can conduct their own security operations.

With regard to the country team and the ambassador, our country team there—we are very, very tight with them. They, as you know, work out of Nairobi, but now they have a facility at Mogadishu, which they just have moved into here in the last week or so. We work very closely with them. The charge does a great job working with President Farmajo because the bottom line is the federal government of Somalia needs a lot of help, a lot of mentoring, and a lot of coaching as President Farmajo moves forward.

Senator REED. I concur, and we do have a good and very courageous team of diplomats on the ground in Mogadishu, but in order to have the impact we need in a very short period of time, we are going to have to up the game dramatically and I do not see that happening on the civilian side. Even your resources are limited as we shift to other priorities and as the National Defense Strategy moves near-peer competition with Russia and China to the forefront leaving both of you with maybe not an economy of force operations but certainly there are different priorities.

But thank you all for your service, and please again convey our thanks to the men and women you lead.

Senator INHOFE. Thank you, Senator Reed.

Senator Ernst?

Senator ERNST. Thank you, Mr. Chair.

Gentlemen, thank you for being here today.

General Votel, I will start with you. My best to Michele as well. Please send my greetings.

General, when I was in Afghanistan a few months ago, I visited military and diplomatic leaders in Kabul, Kandahar, and Baghram. It seems as though the Taliban is now transitioning from an ideologically inspired group into a narco-terror group, which is using ideology as a veil. As such, the Department of Defense is focused on destroying processing facilities and their yields as opposed to just simply destroying the poppy fields. The State Department is very focused on enforcement in conjunction with the FBI [Federal Bureau of Investigation] and the DEA [Drug Enforcement Administration].

Is this strategy different from those strategies that we have used in the past? If so, how are they different?

General VOTEL. Senator, thank you.

They are different. We are using the authorities that have been passed to us recently to ensure that we can go after, as you suggested, these funding streams that are fueling the Taliban right now, and they are proving effective. This is a lesson learned from Iraq and Syria where when we got serious about going after the funding streams that supported ISIS, we started to see an immediate impact. That is exactly the attention here.

I do agree with you. They are well resourced by this narcotrafficking that takes place. So our efforts are not only targeting their production and storage locations but also working with regional partners to help limit the flow of that product out of the region, again trying to impede their ability to benefit from that.

Senator ERNST. So you think it is fair that we call them a narco-terror group?

General VOTEL. I think they are absolutely that way, and they take on many of the characteristics of a mob, mafia type of group.

This is not a popular insurgency. I think that is an important thing for people to understand. Over 90 percent of the people in Afghanistan do not want the Taliban to be in charge of their country. It is not a popular insurgency.

Senator ERNST. As we fight and try to eradicate their funding streams then, do you believe that we are adequately funded to achieve success?

General VOTEL. I do. I think we have got the necessary resources right now to pursue the strategy that has been laid out for us.

Senator ERNST. Then if we are successful in destroying their narcotics industry and their funding sources, what development do we need to see then in Afghanistan to make sure that their people are self-sufficient?

General VOTEL. I think the big idea here is to force the Taliban to reconciliation. The way we do that is by focusing on military pressure, by focusing on political pressure working with the regional partners such as Pakistan, and it is through social pressure. This, of course, is ensuring that the Government of Afghanistan continues to make the necessary reforms that President Ghani has already committed to and that he is moving out on as we speak. This includes not only addressing endemic problems with corrup-

tion, but also ensuring that fair elections are conducted in the country and that they are addressing some of the leadership challenges they have. They are doing these things right now, and I think this will help build confidence in the Government of Afghanistan for the people.

Senator ERNST. I do appreciate that.

I am going to focus in a little bit more on the Afghan special operations units. We have had a lot of United States effort in Afghanistan building the Afghan air force and increasing the size of their Afghan special operations units. How will the creation of the Afghan air force and doubling the size of their special ops units change the conditions on the ground as we see them today?

General VOTEL. Well, I think a key part of our operational approach here is to build on what is working in Afghanistan. Certainly their Afghan Special Operations Forces and the Air Force have been very, very good programs. Essentially what we are focused on doing by doubling the Afghan Special Operations Forces, by building out the air force is to really provide the Government of Afghanistan with a very good offensive capability that can really focus on gaining control of the population, the areas that we need to for the government to exert their writ.

We look at the Special Operations Forces and the Air Force really as their kind of principal offensive capability. Then the Army plays the role as the hold force. Then we are working to get the police to become more competent in their policing functions that are important in the urban and populated areas.

Senator ERNST. I appreciate that. Thank you very much.

When I was in Afghanistan, I was able to visit with some of those pilots, and they are truly excited about being able to support their own country.

Thank you, gentlemen, very much.

Thank you, Mr. Chair.

Senator INHOFE. Thank you, Senator Ernst.

Senator Shaheen?

Senator SHAHEEN. Thank you, Mr. Chairman.

Thank you both for your service and for being here today.

General Waldhauser, I and a number of other women Senators had the opportunity last week to meet with two young women who had been kidnapped by Boko Haram. They had horrific stories to tell us about seeing family members murdered before their eyes, about being forced into marriage, about being gang raped on an ongoing basis.

I asked them what they would like Americans to know about what is happening in Nigeria. They were both Nigerian. What one of them said to me is that people in the United States should understand that this is not just the Chibok girls, several hundred who, as most of us remember, were kidnapped several years ago. But this is happening to thousands of girls on a daily basis in Nigeria.

The translator who was with them, who was with the organization that brought them to the United States, said that this is a strategy by Boko Haram to impregnate women, to grow a whole next generation with that extremist ideology.

I know that in your statement, you talk about Nigeria's capabilities and capacities growing. But in fact, they have not really been able to address this mass kidnapping of girls in Nigeria. Is that your understanding? What are we doing to try and support efforts to address what Boko Haram is doing?

General WALDHAUSER. Thank you, Senator Shaheen. Good to see you again.

Obviously, Boko Haram is one of the most deplorable organizations on the planet. Since 2009, they have killed, depending on what you read or what statistics you look at, well over 20,000 people, and they have displaced millions. They are notorious for the things that you talked about.

With regard to the Chibok girls, you know, almost 4 years ago this month, in April 4 years, 276 were taken away. 163 have been returned, about 60 percent. In a closed session, I can discuss with you what we think or where we think the other 113 girls are.

On February 19th, this happened again in Dapchi. Dapchi is a location that is about 150 miles north of where Chibok is. Although no group has claimed responsibility, based on the location and based on several open sources, we believe it to be ISIS-West Africa. ISIS-West Africa was at one time part of Boko Haram, but they split for a whole host of reasons.

One of the things I will tell you is that we have been asked to provide assistance to the Government of Nigeria to try to help find these girls, and we can talk more about that in a closed session. But we are providing assistance in terms of intelligence support, planning, and the like that they have asked us for. They are trying to find a negotiated solution here. That is their desire. But as you say, the security situation especially in Borno State and Yobe State where this took place is very, very precarious.

Senator SHAHEEN. When we passed the NDAA in 2017, we created a new authority under section 385 that allows the Secretary of Defense to transfer up to $75 million to USAID [United States Agency for International Development] and to the Department of State to implement foreign assistance programs. Are these programs that would be helpful as we are looking at the challenges facing women and girls in places like Nigeria where they need to be reintegrated into their societies? There are challenges with doing that. Can either of you tell me if the Secretary of Defense has requested any of those dollars?

General WALDHAUSER. So, thank you.

The 385 program, as you said, is a new one this year. So we have had to work our way through several of the wickets to see how we could apply it and so on.

We currently have two proposals that we have put through OSD [Office of the Secretary of Defense].

One of them has to do with defections inside Niger where we would like to work with the State Department to follow through on our activities. They would complement our activities. So that one is one we put forward.

A second one we put forward is in Nigeria but it is in the Gulf of Guinea basin where we are trying to get some of the people there to court on a legal perspective, and the State Department can help us there as they run illegal drugs, weapons, and the like.

We have got two nominations in, and we are hopeful that this is something that can complement our overall kinetic effort as part of the development or diplomacy piece of our activities.

Senator SHAHEEN. Well, I think if this committee can be helpful with that, I hope you will let us know.

General Votel, I have only a few seconds left. But I wonder if you could tell us what happened in Syria when our forces engaged with Russia pro-regime forces. It appeared that those were Russian contractors. Is this a new mechanism that Russia is using to engage contractors to serve as mercenaries on the ground for them?

General VOTEL. Senator, thank you.

I cannot speculate on what Russia's intentions might be. But in this particular situation, this was in my view a very clear situation of U.S. coalition forces with our partners on the ground defending themselves. We were attacked in this particular case. My view is that our forces responded properly in this case. They immediately identified what was happening. They immediately got on the net with the Russians and were talking with them before, during, after the event and very effectively brought together the right capabilities, whether it was ISR [Intelligence, Surveillance, and Reconnaissance] or fire support, to address this. I think our people responded extraordinarily well.

Senator SHAHEEN. I am not criticizing.

General VOTEL. I do not know if this is some kind of change in their piece and how they are approaching this. I would just tell you that we remain extraordinarily vigilant to these types of threats and we retain the sufficient capabilities to protect ourselves and our partners on the ground against these types of activities.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator.

Senator Graham?

Senator GRAHAM. Thank you, sir.

General Votel, is there any credible opposition to Assad left in Syria?

General VOTEL. Senator, as you know, our mission is the defeat of ISIS.

Senator GRAHAM. That is not my question. My question is, is there any credible opposition left to Assad in Syria?

General VOTEL. The only opposition that I am aware of is those that are out in the vicinity of Damascus in the Ghouta area and then up in the Idlib area that still controls some terrain. So they do pose some kind of threat to the regime.

Senator GRAHAM. Who is winning in Syria—the civil war?

General VOTEL. Well, again, from a civil war standpoint, it would appear that the regime is ascendant here.

Senator GRAHAM. Do you see any likelihood that the forces you just named can topple Assad in the next year?

General VOTEL. That is not my assessment, Senator.

Senator GRAHAM. Is Iran helping Assad?

General VOTEL. Iran has been a key enabler of the regime for a while.

Senator GRAHAM. Is Russia helping Assad?

General VOTEL. They also are a key enabler of the regime.

Senator GRAHAM. Is it too strong a statement to say that with Russia and Iran's help, Assad has won the civil war in Syria?

General VOTEL. I do not think that is too strong of a statement. I think they have provided him the wherewithal to be ascendant at this point.

Senator GRAHAM. Is it still our policy that Assad must go?

General VOTEL. I do not know that that is our particular policy at this particular point. Our focus remains on the defeat of ISIS.

Senator GRAHAM. Well, if you do not know, I doubt if anybody knows because it is your job to take care of this part of the world.

What does it mean if Iran and Russia and Assad have won in Syria? What does it mean to us and to the region?

General VOTEL. It means that we will contend with this influence of Iran in this particular area and with the influence of Russia.

Senator GRAHAM. What does it mean to Israel?

General VOTEL. Well, certainly from an Iranian standpoint, it means that Iran could be in a position where they could support Lebanese Hezbollah better and then pose a great threat to Israel.

Senator GRAHAM. They are actually doing it. Are they not? They are actually doing that as we speak—the Iranians.

General VOTEL. We have certainly seen some activities that would certainly support that.

Senator GRAHAM. What does it mean for Jordan?

General VOTEL. It means that, again, there are unstable regimes to their north that pose threats to them as well.

Senator GRAHAM. Thank you for your clarity and your honesty. It is not your mission in Syria to deal with the Iranian-Assad-Russia problem. That is not in your things to do. Right?

General VOTEL. That is correct, Senator.

Senator GRAHAM. Do you think it should be?

General VOTEL. At this point, I think if that was the decision that was made by the U.S.-led coalition leadership here, then we would pursue that.

Senator GRAHAM. Detainees. We have rolled up about 400 and something detainees in Syria. The Syrian Democratic Forces have about 400 and some people in their charge. Is that correct?

General VOTEL. Senator, I think you are referring to about 400 or so foreign terrorist fighters that they have within their detention.

Senator GRAHAM. These are the people that did not die for the cause but were captured as we liberated Raqqah and other areas. Is that right?

General VOTEL. As they attempted to escape the areas in which we are operating in right now.

Senator GRAHAM. Do you think we have a credible plan to detain these people?

General VOTEL. We actually do have a plan to detain them on the ground, and we are working with our partners in the government here to work to get them back to their countries so they can be prosecuted in accordance——

Senator GRAHAM. If they do not go back to their countries, do you think we have a credible plan to detain them inside of Syria long term?

General VOTEL. We are working on improving the capacity of the Syrian Democratic Forces to do that right now.

Senator GRAHAM. Africa, General Waldhauser. The Sahel is made up of how many countries?

General WALDHAUSER. Well, five, five or so, yes.

Senator GRAHAM. Of those five countries, how many would you characterize as failed states?

General WALDHAUSER. I do not think there is a failed state there yet, but there are certainly fragile states in that area.

Senator GRAHAM. If trends continue, will they become failed states?

General WALDHAUSER. It is possible.

Senator GRAHAM. Do we have a strategy to prevent that?

General WALDHAUSER. Our strategy is to support the G5 Sahel. We do that bilaterally with these countries in order for them to——

Senator GRAHAM. Is it working?

General WALDHAUSER. It is in the infancy stages. I mean, this G5 program has just begun. You have 5,000 individuals covering a very large territory.

Senator GRAHAM. So 5,000 people are covering five countries.

General WALDHAUSER. That is correct, the border areas.

Senator GRAHAM. I am not a military guy, but that does not sound enough.

Does it matter if the Sahel becomes a region of failed states to us, and if so, why?

General WALDHAUSER. It does matter because the groups that are in that area, ISIS, JNIM [Jama'at Nasr al-Islam wal Muslimin], and the like—some of these have aspirations to conduct things regionally, as well as into Europe and into our Homeland. It is very important that we contain or that we degrade and we work with our partners because if we had a failed state and if these groups took over that failed state, then you have a situation where it is just vast wastelands where people can plan attacks against the United States.

Senator GRAHAM. One last question. Is Libya a failed state, fragile state, state on the mend?

General WALDHAUSER. It is very difficult to characterize Libya, but I would have to say a fragile state. I mean, Salome, who is the UN representative, has got a plan to try to work through a restructuring of the political committees, a constitution, and potentially a vote later this year. But the bottom line is unless the security is there, unless a fair election can take place, and unless those individuals who are part of the process will agree to the outcome of the election, then it would not serve any purpose at this point.

Senator INHOFE. Senator Warren?

Senator WARREN. Thank you, Mr. Chairman.

Thank you, General Votel and General Waldhauser, for your work.

For nearly 3 years, a Saudi Arabia-led coalition has been bombing Yemen to counter Iranian-backed Houthi militias. The United States military has been providing intelligence, mid-air refueling, ammunitions to the Saudis.

As I understand it, refueling operations are governed by something called a bilateral acquisition and cross-servicing agreement.

The United States has one with both Saudi Arabia and the UAE. I have read over these documents, and there are a few things they do not seem to cover that I want to ask you about.

So, General Votel, does CENTCOM track the purpose of the missions that it is refueling, in other words, where a U.S. refueled aircraft is going, what targets it strikes, and the results of the mission?

General VOTEL. Senator, we do not.

Senator WARREN. Reuters recently reported on a Saudi coalition air strike in late February that killed five civilians and wounded 14, including four children. According to witnesses that were interviewed by Reuters, the coalition conducted two additional air strikes that hit paramedics who were trying to save civilians in the rubble.

General Votel, when you receive reports like this from credible media organizations or outside observers, is CENTCOM able to tell whether U.S. fuel or U.S. munitions were used as part of that strike?

General VOTEL. Senator, I do not believe we are.

Senator WARREN. The reason I ask about this is because the Yemeni people are suffering, and this is a humanitarian crisis. That is why I cosponsored the Sanders-Lee resolution that directs President Trump to stop our involvement in Saudi military operations in Yemen unless Congress provides specific authorization. The bill would allow our counterterrorism operations against al Qaeda and its affiliates to continue, but it would ensure that the United States is not giving the Saudis a blank check to bomb Yemen and worsen the humanitarian crisis.

I know that Iran sanctions against Yemen are destabilizing. They are making the conflict worse, and that is unacceptable. But we need to be clear about this. Saudi Arabia is the one receiving American weapons and American support, and that means we bear some responsibility here. That means we need to hold our partners and our allies accountable for how those resources are used.

I have one other question I would like to turn to, if I can. That is, earlier this year, Secretary of State Tillerson implied that United States troops would stay in Syria indefinitely. In addition to our forces, Hezbollah, Russian forces, Iran's Islamic Revolutionary Guard Corps, and now Turkish troops are also operating on the ground, and we have already had several run-ins with these forces.

With my remaining time, I have just one question. General, how is CENTCOM deconflicting between these various forces that are operating on the ground, and what is your strategy for de-escalation if a confrontation occurs?

General VOTEL. Senator, thank you for the question.

First off, the principal we are deconflicting is through direct communications. As you aware, we do have direct communication line with the Russian Federation forces on the ground. I would characterize our conversations with them as militarily professional. They take place several times a day, and they have been going on for a couple of years. I do think this has been a very effective way of ensuring that we can deconflict and prevent things from happening in ground space and in the air space.

We also have the same thing with our Turkish partners to the north. In areas where we are in close proximity, again we have very good communications with them. We are able to deconflict. We are able to ensure that people have good situational awareness, they understand what we are doing with our partners on the ground. This direct communication really allows us to ensure that we can minimize the opportunities for escalation or for miscalculation on the ground. I think these are working very, very effectively.

Senator WARREN. So this is mostly about communications.

I just worry, General, because the situation in Syria is extraordinarily dangerous. I am not sure that throwing a small number of U.S. troops in the middle of it is a sustainable, long-term solution. I believe we need a clear strategy here for ending the violence and for holding Assad accountable. But I appreciate your work in this area. Thank you very much, General.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Rounds?

Senator ROUNDS. Thank you, Mr. Chairman.

Gentlemen, let me begin by thanking you both for your service to our country as well as to your families as well for their sacrifice and your time away from home.

I would like to begin by talking a little bit about AFRICOM. General Waldhauser, I am curious. I have had the opportunity to accompany Senator Inhofe on several of his most recent trips to Africa. Senator Inhofe has now made over 150 different nation stops in Africa over the last 20-plus years. What I find interesting in each of our trips has been the amount of interest that those countries and those leaders in those countries have in relationships with our country.

In the case of AFRICOM and our abilities, right now, as I understand it, if you need resources—and you do in an area of the world in which things are not getting quieter, they are getting more intense—you basically borrow from other operations in and around for the resources that you need. Would you explain for us how AFRICOM actually receives the resources that it needs right now?

General WALDHAUSER. Thank you, Senator Rounds.

There are two or three ways we receive forces. One of them is if we are assigned forces, and we do not have assigned forces but we have allocated forces. For example, the Marine Corps special purpose MAGTF [Marine Air-Ground Task Force], which mission has to do with protection of U.S. citizens and property on the continent—we are allocated that organization.

Senator ROUNDS. How large is that force?

General WALDHAUSER. That force is company-sized units, six MV–22's and some C–139's, but it has lot of ground to cover on the continent.

Senator ROUNDS. An entire continent.

General WALDHAUSER. An entire continent. We have used that or we have moved that around to help on the entire continent.

We also have a force in Djibouti, an East African response force from the Army. That is a company-sized unit, and that is also tied to the issue of protection of U.S. citizens with property.

We have Special Operations Command, which has a large part of what we do in terms of the forces that come to do the train, advise, and assist.

We also have episodic forces that come from the Army, for example, to train units. They just trained, for example, for about 6 weeks a battalion in Nigeria.

Although we do not have assigned forces, we are allocated forces, and we compete for those through the Global Force Management process, which the Joint staff runs on behalf of the Secretary.

Senator ROUNDS. Is it time to take a look at actually standing up AFRICOM, the same as the other combatant commands are stood up?

General WALDHAUSER. Well, in that regard, I think we are the same as the other combatant commands. We have a COCOM [combatant command] staff of the same size, relatively speaking. We are located, obviously, in Stuttgart, Germany. We have great interagency partners with us, as well as military force. But AFRICOM staff per se is one that is like the other COCOMs.

I think perhaps what you may be referring to is our components. Our components in some cases are dual-hatted. The Air Force is dual-hatted Europe and Africa. The Navy is dual-hatted. The Army is separated.

Senator ROUNDS. Do you find that working in the current capacity?

General WALDHAUSER. It is working. There is no doubt about it, and we move assets around between the COCOMs. For less than 30 days, we do not need the Secretary's approval to do so. We work with EUCOM [United States European Command] and we work with General Votel and his team all the time. If we have kinetic operations, for example, in Somalia that require a little bit more, we will schedule those and we will organize those around a period where we can gain assets from CENTCOM, for example.

The continent of Africa is extremely large, and it is virtually impossible to cover the whole thing all the time with other priorities around the globe for the United States. But we have to be smart, innovative, and we have to have good relationships with our fellow combatant commanders in order to make it work.

Senator ROUNDS. Are we placing the appropriate emphasis on Africa? Look, right now, we know there are hotspots. Long-term, this is a developing part of the world, which seems to me other super powers, other nations are paying a great deal of attention to, China in particular. Are we doing the same?

General WALDHAUSER. Well, I think back to your original point, first of all, all the countries on the continent for the most part really want to be associated with the United States. They want our assistance. They want our leadership. But they do not really expect a lot. I mean, little things can go a long way. I think in the countries that you and Senator Inhofe have visited, perhaps you have seen that in spades. But we have to remain engaged there for a whole host of reasons, which I think you understand. I think a little goes a long way on the continent because at the end of the day, we are trying to develop capacity for their security forces to take care of their security problems.

Senator ROUNDS. Thank you. My time has expired. I thank you both, once again, for your service to our country.

Thank you, Mr. Chairman.

Senator INHOFE. General Waldhauser, I do want to have a personal discussion with you in the next few days because I do not agree with you in the way this is set up. I was here when we established AFRICOM, and there was a debate about dedicated assets at that time. I would like to go over it to get clarification around that issue.

Senator Peters?

Senator PETERS. Thank you, Mr. Chairman.

Thank you both, gentlemen, for being here today and for your service.

General Waldhauser, I would like to talk a little bit about Nigeria and add to some of the questions that my colleague asked you about.

I had the opportunity to travel to Nigeria as part of my work on this committee last year, and I was very concerned about ISIS–West Africa, which you mentioned is basically a splinter group from Boko Haram. At that time, it looked as if the situation was deteriorating. My question to you is, what is the status? Where are we in relation to ISIS–West Africa? Is the situation getting better?

General WALDHAUSER. ISIS–West Africa—of those two groups, if you divide them in half, Boko Haram and ISIS–West Africa, ISIS–West Africa is the group that is of more concern to us. They have ties to ISIS core. They have some funding from ISIS core. They have indicated in the past their desire to go outside the region to conduct activities, attacks, if you will, on U.S. interests in the area. They certainly are more of a concern to us at this particular time.

Senator PETERS. Are we applying adequate resources to deal with the issue?

General WALDHAUSER. The strategy for ISIS–West Africa is with the Lake Chad basin region where we apply our assistance to the countries around there, Cameroon, Chad, Niger, and Nigeria. We have made progress with Nigeria in the last year or so with regard to our ability to share intelligence with them, to assist them in planning, and also to assist in training.

Senator PETERS. You mentioned in your written testimony that the multinational task force in that area in the basin does not seem to be as interested in dealing with the situation. They believe it is a Nigeria-centric problem. I gather you do not agree.

What can we do to convince them otherwise? Based on your testimony here today, it sounds as if they do want to operate across a broader region.

General WALDHAUSER. Well, they do want to operate—the countries that support the multinational joint task force. But in most cases, these countries have significant other challenges, whether it be Nigeria itself in the coastal area or in the central area, whether it is a country like Chad, for example, who has concerns about their border with Libya. Niger has all kinds of issues throughout their country, and so the ability to have large military forces that can do all of these things is difficult for these countries. Sometimes it appears—let us just say over a period of months, the trend line has been in a negative way, if you will, on how Boko Haram has

been acting, these countries may decide to move their assets other places because their interests and their security concerns—Boko Haram, for example, may not be on the top of the list based on some internal issues that are going on within those countries.

Senator PETERS. You mentioned Chad which is in a very dangerous part of the world in the region that we are focused on. It has always been my understanding in some briefings that I have had related to some of the operations in the Sahel, that Chad has been a pretty capable and productive partner for U.S. operations. Is that accurate?

General WALDHAUSER. That is accurate. But their main concern I think at the moment would be the issue of foreign fighters coming from Libya into their northern area.

Senator PETERS. Having a relationship with them is important because that could also have an impact to the United States. I know that yesterday Secretary Tillerson—I guess former Secretary Tillerson—indicated that the United States is considering removing Chad from the travel ban.

Now, I have been concerned about some of the rhetoric we have seen from the President in relation to Muslims and African nations, including using some very disparaging language in reference to African nations. I think that can damage certainly our standing and working in that part of the world.

I would like your thoughts as to any impact on the relations we have had with Chad as a result of them being included in the travel ban and how important our partnership with countries like Chad and others in dealing with what could be very serious issues arising out of the African continent.

General WALDHAUSER. Senator, we continue to work with all the countries, Chad included, and show them our commitment and demonstrate our desire to help them build capacity. One example I would give to Chad. It is a small example and it is very simple, but it demonstrates I think AFRICOM's commitment.

A few months ago, there was a huge storm in Chad and various aircraft hangars—and they have a very, very small air force. But a few aircraft hangars were destroyed, and they simply have no way to repair them. We were able to gather some funds and quickly send a team down there and erect several shelters that would replace these hangars that had been destroyed in the storm. That is a small way to demonstrate our commitment and AFRICOM's commitment to that country to let them know that we certainly are behind them and have a desire for their capacity to be built.

Senator PETERS. Thank you.

Senator INHOFE. Senator Scott?

Senator SCOTT. Thank you, Mr. Chairman.

Good morning to you. Thank you for being here this morning.

General Waldhauser, the National Defense Strategy describes the greatest threat to U.S. prosperity and security as a reemergence of long-term strategic competition by revisionist powers. These revisionists include Russia and China, two countries we see more and more activity in the continent of Africa. China just opened a new naval base in Djibouti, mere miles from our only enduring military presence in Africa while Russia has been courting leadership from both sides of the conflict in Libya and announcing

major new investments in Zimbabwe. These Russian and Chinese efforts are self-interested as these countries are doing very little to counter the myriad of terrorist threats across the region. Groups such as Boko Haram, ISIS–West Africa, and Al Shabaab continue to operate freely.

What is your assessment of the Russian and Chinese activities in Africa? First question. The second, as we shift our National Defense Strategy to the two revisionists, how are we working to make sure that the terrorist activities in Africa do not find their way to our country?

General WALDHAUSER. Thank you, Senator.

The first part, I will talk about Russia rather briefly.

First of all, Russia's interest in the continent has to do with intelligence exchanges with various countries with arms sales and also with energy partnerships. You mentioned Zimbabwe. There is a platinum mine there that they have had some activities in. They have got a $4 billion investment there. They are also interested in arms sales because there has not really been any arms sales from the West since about the mid-2000s there. So they are trying to open those type of markets any way they can to show that the U.S. perhaps is not a good partner or someone that is not willing to work with them.

My personal concern with the Russians is what they are trying to do in the northern part of the country from Egypt to Libya, Tunisia, Algeria. It is that part of northern Africa on the Mediterranean, which is on the southern part of NATO. They have got interests there. As you said, in Libya they are playing—on one hand, they talk about supporting the UN agreement, but on the other hand, the support that they provide for Haftar and the HOR [Tabrule-based House of Representatives] forces is something that needs to be addressed.

With regard to China, they obviously have a lot of investments. They are interested in the One Belt, One Road. That gives them the ability to diversify economically imports and exports. I think that has been very well documented. So they obviously have a big part in there too.

But there areas where we can work with China. I mean, we have a unique situation where their base in Djibouti is just a mile or so from ours. If there are interests that have to do with humanitarian, peacekeeping, safekeeping with regard to air flight and range usage by their ground forces there, we have to find a way to communicate that with them. On one hand, we are certainly aware of the great power competition, but we have a unique situation where they are a neighbor of us in Djibouti.

With regard to the future and what the National Defense Strategy says, really if you look at what Africa is described in there, we are told to conduct a by, with, and through strategy. We are told to develop relationships, work with our partner forces to continue the C–VEO [violent extremist organization] struggle there. Even though a lot of it is China, Russia, Iran, and North Korea, the part on Africa basically tells us to continue what we have been doing to include building partnership capacity to defeat the terrorist organizations.

Senator SCOTT. So, General, do you see the Chinese in proximity to our basis as an opportunity for partnership, as well as the Chinese being a competitor?

General WALDHAUSER. It is, and that is the unique part. It is the only place on the planet where China has an overseas base. It is right next to ours. Not only do you have China and the United States in Djibouti, there is Japan. The French and the Italians are all located there as well. The Chinese have started to work closely with the French in terms of some of the exercises they do there. This is small-level operations. But again, the unique situation is what we do with China obviously has to be informed by our overall global strategy, but the unique situation that we have with those individuals being next door and participating in peacekeeping operations and anti-piracy operations, we have got to find a way to work with them as well.

Senator SCOTT. Thank you.

General Votel, I have a few seconds left, 30 seconds. As opposed to naming the conflicts and the extraordinary complexity in your region, I will just ask a question.

As you consider the strategic environment in the Middle East and competing interests among even our nominal allies such as Turkey, would you provide your assessment of Russia, Turkish, and Iranian goals in the Middle East and if you see their goals as mutually supporting the overall conflict?

General VOTEL. Well, first off, Senator, Turkey is a NATO ally. Our relationship is deeply valued. They have been a key partner in the fight against ISIS here for a long period of time, and we do recognize they have legitimate concerns with security along their border from terrorism. Of course, this has led to a little bit of a tension between us at this particular point that we are working through largely diplomatically but also militarily at this particular point.

I guess what I would highlight is what I mentioned in my opening remarks and that is Russia does play a role here. Again, it is cute to say arsonists and firemen is kind of what they try to do. They are trying to instigate tension among partners in the region and then trying to play a role in trying to be an arbiter in that. This is what happens, and this is what plays out on a regular basis. We really do have to take a look at our long-term relationships and make sure that we are focused in on that and staying as strong as we can on those. I am concerned about this role that Russia plays in northern Syria and how it impacts all of our relationships and especially the relationship between us and Turkey.

Senator SCOTT. Thank you, General. I will submit a couple questions for the record as it relates to Turkey.

General VOTEL. Thank you.

Senator SCOTT. Thank you, Mr. Chairman.

Senator INHOFE. Senator King?

Senator KING. Thank you, Mr. Chairman.

General Votel, I want to follow up on a couple of the questions that Senator Warren asked about Yemen. What would be the implications and the impact if the United States stopped providing the aerial refueling, the intelligence, and the advice to the Saudi forces?

General VOTEL. Senator, I think right now the provision of those things that you just covered right now gives us placement, it gives us access, and it gives us influence with Saudi Arabia. What I would highlight to you is that we have been working with them sharing our own experiences.

Senator KING. But you testified earlier that when we refuel a Saudi plane, we do not have any control over the mission, where it goes, what it does next. If the argument is that this allows us to maintain control, are we maintaining some level of control?

General VOTEL. The influence that we derive with them is by working with them to demonstrate how we do our targeting process——

Senator KING. Do they listen?

General VOTEL. They absolutely do.

Senator KING. Have they ever changed a mission based upon our input?

General VOTEL. They absolutely do. In the work that we have been doing with them related to the ballistic missile threat, we have seen some very good progress in this area. Recently Saudi Arabia has followed many of the things that we have done in terms of how we stand up architectures to investigate civilian casualties. These are problems that we have on occasion even as good as we are.

Senator KING. So the principal argument against this move to limit or cut off that aid is if we do, the Saudi conduct might be worse.

General VOTEL. Senator, from my perspective it is better for us to stay engaged with them and continue to influence this. They want this type of support, and they want to improve their capability.

Senator KING. You said for us. How about for the people of Yemen?

General VOTEL. I think it is absolutely essential that we stay engaged in this for them. I think this does give us the best opportunity to address these concerns.

Senator KING. Thank you.

Turning to Iran, I understand Iran—all the testimony is Iran is abiding by the JCPOA in terms of inspections and what they are doing. What would be the implications for the region if the United States abruptly terminated the agreement, and what would Iran do?

General VOTEL. Senator, I cannot speculate on what Iran would do. You know, the implications for the region—I think there would be some concern I think about how we intended to address that particular threat, if it was not being addressed through the JCPOA. Of course, our approach here is one of assuring our partners, maintaining deterrent capabilities in the region, and then of course, where we can——

Senator KING. But if the agreement were terminated, would the Iranians not then be free to pursue a nuclear weapon within a matter of months?

General VOTEL. Theoretically they would be able to do that.

Senator KING. That certainly would not contribute to—if the Iranians had a nuclear weapon, we would have two rogue states with

nuclear weapons on our hands instead of one, the other one being North Korea.

General VOTEL. Right. This could certainly be the case. Again, we are speculating that that would be the direction.

Senator KING. Do you think it would be in the national security interest of the country to maintain the Iran agreement at least for the near term?

General VOTEL. I share the Secretary of Defense's and Chairman's comments on this, that right now I think it is in our interest.

Senator KING. There may be a different point of view in 4 or 5 years when it is near the end of its term. Is that correct?

General VOTEL. That could be true.

Senator KING. Thank you.

Turning to Pakistan, by the way, you have one of the most complicated jobs in the world I think. You can go from one area to the other—I have not even mentioned Syria. Is Pakistan still supporting terrorist activity in Afghanistan, and has the recent get tough with Pakistan policy influenced their behavior?

General VOTEL. It has. The pressure that has been put on Pakistan I think through our South Asia strategy and some of our public communication I think has helped gain their attention. As I have mentioned previously, we have seen some positive indicators as a result of this. I cannot tell you that we have seen decisive changes in the areas in which we are working, but I remain very well engaged with my partner to ensure that we are moving forward on this.

Senator KING. But there appears to be a surge of attacks in Afghanistan. You do not associate those with Pakistan?

General VOTEL. Well, again, having sanctuary in Pakistan or having support from other actors in the region certainly is an aspect of the Taliban's success here. So I think we have to look at all of these to ensure we attribute the causes of these attacks to where that is. We also have ISIS that does have a different approach as well.

Senator KING. Final question. Should we be even tougher with Pakistan? Should we ratchet up the pressure because they still are providing sanctuary? It is still unclear whose side they are on in that region.

General VOTEL. Senator, I think right now the strategy that we have is an appropriate one, and I think we have the mechanism to continue to keep them focused on our objectives, our mutual objectives here. So I do think we are pursuing this in the right way, and I think some of the positive indicators that we have begun to see, although it has not to led to decisive changes yet, are things that we have to pay attention to as we move forward.

Senator KING. Thank you. Thank you, gentlemen.

Senator INHOFE. Thank you.

Senator Sullivan?

Senator SULLIVAN. Thank you, Mr. Chairman.

Gentlemen, good to see you. Thanks for your service.

General Waldhauser, I just want to ask a very basic question. I know there is an answer to it that I am sure I am missing. But why is AFRICOM not located in Africa?

General WALDHAUSER. Well, as you know, this is the tenth year of the Africa Command as it stood up. There have been several attempts to perhaps move it to the continent.

Senator SULLIVAN. What is the roadblock? Is it because they do not want us there, or is it the Congress not helping you? It always seems to me a little disjointed that it is in Germany.

General WALDHAUSER. Well, I think the roadblocks are, first of all, there is a financial aspect of this, the cost to do that. But then the second and third order effects, if you move to a country in Africa, then what does that mean to surrounding countries or other partners? They may view that as something that is perhaps skeptical.

I think just to restate it, 10 years ago when the command was stood up—and Senator Inhofe is well aware of this—there was a lot of skepticism on the continent as to what the intent was for a military command for that particular area. It surfaces every once in a while, but to my knowledge, there has been no effort at the moment to move.

Senator INHOFE. If you will let me use 10 seconds of your time, I would say that the reason is perceived colonialism. I was on your side back when we set this up 10 years ago, and I lost that battle.

Senator SULLIVAN. Well, maybe we should relook at that. It just seems to me—anyway, it is probably a longer conversation.

General Votel, I want to congratulate you and the men and women under your command on the campaign with regard to ISIS. You know, it is really remarkable what you have achieved over the last year. I do not think the press has done an adequate job of highlighting that, but it is quite commendable. So please pass that on to your men and women who are serving with you.

But the next question is—so we are going to have troops remaining in Syria. There seems to be a bit of a disconnect regarding what that mission is. Obviously, we do not want ISIS to return. So that has got to be a key component. But in your testimony, there is a lot of focus on Iran. Obviously, they are in Syria or their proxies. I guess former Secretary Tillerson now gave a speech not too long ago at the Hoover Institution at Stanford and was very focused on Iran and how our mission there in Syria should be about countering the Iranian threat.

I get a little bit nervous when we have troops on the ground in a very kind of complicated, hostile region where it is not 100 percent clear what the mission of our troops are. I do not think anyone wants us to get back to the situation like we had with the marines in Lebanon 3 or 4 decades ago where their mission was "presence," and obviously that did not turn out very well for our troops there. What is the mission of our troops in Syria, and are they focused on countering the Iranian threat, which is probably the biggest threat that we have there. Is it not?

General VOTEL. Senator, thank you.

Our mission in Syria is strictly focused on defeating ISIS.

Senator SULLIVAN. Okay. But what is the biggest threat in Syria right now?

General VOTEL. Well, the biggest threat in Syria right now is all the other instability that is taking place that is preventing the country from moving forward——

Senator SULLIVAN. Is Iran not behind it?

General VOTEL. Certainly Iran is an aspect of this, but so is Russia and so is the regime itself. Our mission, of course, has been focused on ISIS. We still have ISIS that we are addressing. So that is where our particular focus is.

I would tell you that while we do not have a specific task to do something against Iran in this particular area, our strong relationships with the Syrian Democratic Forces, certainly our strong relationships with the Iraqi Security Forces do put us in a position where we, through our strong relationships, can have influence, can encourage them to conduct operations and do things that are in the interest of their countries, as opposed to other parties in the area.

Senator SULLIVAN. Can I just ask a final question? My time is running out.

We know how that during the 2004, 2005, 2006 time frame, that the Iranians were supplying Iraqi Shiite militias some of the most sophisticated, deadly IEDs [improvised explosive devices] on the battlefield that ended up killing and maiming thousands of American troops. So in my view the blood of American soldiers and marines and sailors, airmen—the Iranians had that on their hands. Right? That is a fact. They, of course, denied it back then, but it is a fact that we all know now.

I just want to make sure in terms of our rules of engagement, if there is any, any, any threat posed by any Iranian or Iranian-backed proxies, do our troops have the full authority to respond to defend themselves and kill these threats, again given that they have a history of killing our troops? Do they have that rule of engagement authority?

General VOTEL. They do, and we have actually demonstrated that most recently in the middle of the Euphrates Valley. But as you will recall last year down around the Top area, we did have pro-regime forces supported by Iranian Shiite groups that attempted to encroach on us and we did use the full capabilities within our arsenal to protect ourselves. So I think our people clearly understand this, and they have all the authorities they need to protect themselves.

Senator SULLIVAN. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Blumenthal?

Senator BLUMENTHAL. Thank you, Mr. Chairman.

Thank you both for your service in particular in very difficult areas of the world and parts of the world that are very important to the United States.

General Votel, talking about America's mission in Syria that was just the subject of Senator Sullivan's questioning, is one of our missions or one of our responsibilities in Syria not to prevent war crimes?

General VOTEL. Certainly within the forces that we work, certainly.

Senator BLUMENTHAL. War crimes are occurring in Syria with the support and apparent encouragement of Russia. Correct?

General VOTEL. I think if you look at some of the activities that take place over in the Damascus area and the Ghouta area, I think we certainly would think that was the case.

Senator BLUMENTHAL. In fact, last week UN investigators linked Russia, specifically the Russian air force, to possible war crimes, citing the November attack near Aleppo when a Russian fighter killed at least 84 people and injured more than 150. In the last 3 weeks, as you have observed, more than a thousand people were killed in Eastern Ghouta with Russian military support. My question is what can and are we doing to deter Russia from engaging——

General VOTEL. Well, Senator, as you know, we do not operate in that particular part of Syria militarily. But certainly through our diplomatic channels, through our ambassador in the UN, Russia has, frankly, been one of the authors of this recent ceasefire. Their inability to enforce it, to enforce standards on this really means one of two things: one, they lack the ability to do that, or they are choosing not to do that. I think one of the things that we do have to do is hold them accountable for the actions that they are taking here and for the humanitarian disasters that they are perpetuating through their support to the regime and through their own activities.

Senator BLUMENTHAL. What would you recommend to hold them accountable?

General VOTEL. Well, I think certainly the best way of doing this is through political and diplomatic channels, and certainly if there are other things that are considered, we will do what we are told. I do not recommend that at this particular point, but I think holding them accountable to the things that they have agreed to, particularly through the offices of the United Nations or others here, I think is a very important way of approaching this.

Senator BLUMENTHAL. So far, they have not been responding to whatever political or diplomatic steps that have been taken. Correct?

General VOTEL. It does not appear that they are, Senator.

Senator BLUMENTHAL. In order to have some effect, the intensity of whatever we are doing diplomatically and politically has to be heightened, or there need to be some kind of military responses to protect people in that area from the war crimes that are being perpetrated. Would you agree?

General VOTEL. It certainly needs to be addressed.

Senator BLUMENTHAL. In terms of diplomacy—I think others may have raised this before me—is the lack of ambassadors in the area, the lack of sufficient diplomatic capacity in this State Department not an obstacle to really effectively using diplomacy?

General VOTEL. Senator, I cannot comment on the broader aspects of the Department of State. That is more appropriate for them.

But what I can comment on is in the 18 country teams that we work with of the 20 countries that are in the region—we do not have a country team for Iran or for Syria—we have extraordinarily good relationships. Twelve of these countries do have ambassadors. Six do have chargé d'affaires. The relationships we have with them I think are very good. We get good advice. We have good coordina-

tion with them in our day-to-day activities. I think our relationships, certainly from a military standpoint, remain very, very strong with our diplomatic partners across the region.

Senator BLUMENTHAL. So 6 out of the 18 ambassadorships are vacant?

General VOTEL. Six out of 18 that have country teams are being led by charges at this point.

Senator BLUMENTHAL. Does that not reflect an absence of leadership in the Department of State?

General VOTEL. I think that is probably a more appropriate question for them than for me, Senator.

Senator BLUMENTHAL. Thank you, General. Thanks for your very helpful and forthright answers. Thank you.

Senator INHOFE. Thank you.

Senator Cotton?

Senator COTTON. Thank you, gentlemen.

I want to add my voice to Senator Blumenthal and his concerns about what is happening in Syria. I was in the grocery store at home on Friday, and an old, rough and tough retired marine came up to me. He was wearing a USMC [United States Marine Corps] hat. That is how I knew it, but I would probably be able to figure out even if he was not wearing the hat. He introduced himself and said he just wanted to ask me a question. You know, often in settings like that, the question might be about the VA [Veterans Affairs] and what they are doing for our vets. But the question was what are we going to do about Syria. How can anybody stand by and watch what is happening to those little children throughout Syria?

I thought it was a very touching moment but also indicative of how much normal Americans pay attention, not just the humanitarian crisis there but to the strategic disaster Syria has been for 7 years.

But for now, I want to turn my attention south to another civil war, in which Iran is meddling. General Votel, in Yemen, when this war started 3 years ago, much of the fighting was confined to the mountainous terrain of Yemen, and now long-range missiles are being fired at King Khalid International Airport outside of Riyadh. It seems like a dangerous escalation in the fighting there. Does it not?

General VOTEL. I would absolutely agree, Senator.

Senator COTTON. Where are Houthi rebels getting long-range missiles that can range the airport in Riyadh?

General VOTEL. Senator, they are getting them from Iran.

Senator COTTON. Well, that is not very neighborly of Iran with its neighbor, Saudi Arabia.

How are they getting those missiles into Yemen?

General VOTEL. Senator, I think Iran has a very sophisticated network of doing this. They can certainly move them by components. They can move them by air. They can move them by maritime means. They can move them by land routes to get their stuff in there and then reassemble it and provide it to the Houthis.

Senator COTTON. Can those missiles range the United Arab Emirates?

General VOTEL. I think, Senator, some of this might be a discussion that is best handled in a classified setting. But as you pointed here, we have seen threats that have gone as far as the international airport outside of Riyadh.

Senator COTTON. If you were a Saudi leader or an Emirati leader, you probably would not be very happy about those missiles being able to range your citizens. Would you?

General VOTEL. I agree. It is a dangerous threat to them. It is a dangerous threat to us. We have 100,000 United States citizens that live and work in Saudi Arabia.

Senator COTTON. We also have more than a few naval and merchant ships going through the Bab al Mandeb. Do we not?

General VOTEL. We absolutely do.

Senator COTTON. Could you tell us a little bit more about the nature of the intelligence and military support we are providing to the coalition fighting in Yemen?

General VOTEL. Certainly. We are not parties to the civil war, as you know, Senator. Our principal focus in Yemen has been on the counterterrorism front against al Qaeda and now against ISIS there. But we are authorized to help the Saudis defend their border, and so we have done that. We are doing that through intelligence sharing, through logistics support and through military advice that we provided them. We are principally focused on the ballistic missile threat and the maritime threat that plays out in the Bab al Mandeb and in the Red Sea to the west of Yemen.

Senator COTTON. Is it fair to characterize that as a primarily defensive operation in nature?

General VOTEL. It is principally defensive. It is designed to, again, protect Saudi Arabia.

Senator COTTON. Thank you.

General Waldhauser, there has been some open source reporting about China's construction of the African Union headquarters in 2012. That open source reporting states that China installed microphones in the walls and under desks, and it has also copied data from servers each night. AU [African Union] has since installed new servers and swept its headquarters to remove these listening devices.

This kind of public disclosure of blatant Chinese espionage, you would think, would cause many nations, but especially those victimized at the AU headquarters, to think twice about accepting such Chinese generosity, if you will.

Have you seen any kind of growing reluctance by the AU or by African nations to cooperate with China or accept that kind of aid given this espionage against the AU headquarters?

General WALDHAUSER. I really have not seen any reluctance on part of African countries individually to refuse any type of aid. I mean, I think that the Chinese assistance with infrastructure building and the like is something that is welcomed there, but then the agreements that they make, the arrangements that they make need to be scrutinized.

I would say, however, to that point, with our base in Djibouti and the Chinese base right next door, what you described is a big concern to us. I mean, we have got to make sure that our operational security is such that we can operate freely there because it is not

just AFRICOM that uses Djibouti. Special Operations Command, European Command, CENTCOM all use that area, and we need the ability to operate freely there.

Senator COTTON. I agree.

Thank you, gentlemen, both for your service and for your appearance today.

Senator INHOFE. Thank you.

Senator Kaine?

Senator KAINE. Thank you, Mr. Chair.

Thank you to our witnesses for your testimony.

General Votel, I want to start. We had a good session with General Scaparrotti about EUCOM last week, and he mentioned that you and he spend a lot of time together especially talking about Syria and Turkey. There have been some questions about Syria. I want to really focus on the Kurds in northern Syria.

The Kurds have been superb fighting partners of the United States. Or maybe I would put it in reverse. We have been superb fighting partners of theirs in trying to drive ISIS back. They have helped us and we have helped them significantly. But the United States-Kurdish relationship in northern Syria has been a real tough spot with our NATO ally, Turkey. Now that we, through the great work of your team and our coalition partners, have made some real battlefield success against ISIS in northern Syria, what do you see as sort of next steps forward in the relationship of the United States to the Kurds that can hopefully allay some of Turkey's concerns and maintain their ability as a NATO ally to provide us the support we need?

General VOTEL. Thank you, Senator.

As you know, there are ongoing diplomatic discussions with Turkey led by the Department of State. I will not comment on those. They certainly have our support with that to work through that.

Our intention with Turkey—and we do, again, recognize their concerns here and have certainly kept that in the forefront of our mind—has been to try to be as transparent and clear with them on the things that we are doing with our partners on the ground, the Syrian Democratic Forces, which is about half and half Arab and Kurd. So they have proven to be, as you pointed out, very effective against ISIS. As we move especially in the liberated areas and the areas where we are now consolidating our gains, we are trying to move more into the stability phase here so we can root out the remainder of ISIS and we can allow people to come back into their villages and back into their homes. I think we have, again, got to continue to work closely with Turkey and with the coalition and certainly with our State Department partners here to work through this. It is, as you pointed out, an extraordinarily complex situation. The demographics of the area are all over the place frankly in this. This is going to take a lot of very close work on the ground.

But I think the important piece to get in place right now is to make sure that we have good communication back and forth, we have a mechanism to reduce tensions and certainly to pass information and prevent these situations from escalating into conflict. That will make it extraordinarily difficult to resolve if we are instigating conflict among ourselves.

Senator KAINE. Let me follow up focusing on Syria for a minute. If you will forgive me, I am going to read a statement out of the Marine Corps' doctrinal strategy publication to an Army general:

"What matters ultimately in war is strategic success, attainment of our political aims, and the protection of our national interests. History shows that national leaders, both political and military, who fail to understand this relationship sow the seeds for ultimate failure even when their armed forces achieve initial battlefield success. Battlefield brilliance seldom rescues a bad strategy."

I am very, very puzzled about the strategy right now in Syria. We have asked the administration to come up even in a classified session and talk to us about strategy because the battlefield success of the United States plus partners against ISIS has been very notable, very, very notable. But we read just in open source newspaper articles we need to stay in Syria to not let ISIS come back. We need to stay in Syria to check Iran. We did a missile strike against Syrian forces after Syrian forces pushed against Syrian opposition. We came in a couple of days later with a missile strike against them.

We are seeing activity, but we are not really yet, in Congress, kind of read into a strategy. I do not know that this is really the place for a discussion of that. It might be better to do it in a closed session. But some of us have been asking the administration to read us into the full strategy. Is it just about keeping ISIS from reoccurring? Is it to check Iran's presence in Syria? Is it to actively push against the Syrian military, as we did with the missile strikes last April and then the recent missile strike that occurred last month? We are real puzzled about it. Anything you want to say about that in open?

General VOTEL. Senator, our mission, as you know, has been strictly focused on ISIS. The coalition has been focused on addressing this common threat that virtually everybody agrees has to be dealt with. That is what we have been doing with this. By pursuing the consolidation operations, by stabilizing the areas in which we are operating, what we are hoping to do is create a platform, a platform upon which the international community can move forward under a Geneva process and begin to also address the broader underlying issues that are very apparent across Syria and that really cannot be resolved through fighting but have to be resolved through talking and through diplomatic means under the United Nations.

Our focus on addressing this common threat that everybody—everybody—agree is bad is really I think one of the preliminary steps that has to take place. Certainly I think continuing to keep them from rising, continuing to allow these areas to become stabilized, get people back in their home, reduce the refugee problem, I think contributes to, hopefully, creating an environment that the international community can step forward into with the leadership of the United States and others here to actually pursue a diplomatic solution to these problems through the United Nations.

Senator KAINE. Thank you.

Thank you, Mr. Chair.

Senator INHOFE. Senator Perdue?

Senator PERDUE. Thank you, Mr. Chair.

Thank you both for your decades of service.

I would like to echo earlier comments, General Votel, for a message sent to your troops for the outstanding success we have had over the last year. It goes without notice here many days, but I want you to know on record those of us who pay attention, we are very, very grateful for that.

I have a question, General Waldhauser, before I get into the other question. Recently four United States servicemen were killed in Niger, and one of those, Staff Sergeant Dustin Wright, was a constituent of mine. So your investigation is obviously very important to us. When do you expect that investigation to be completed, sir?

General WALDHAUSER. Senator, thank you very much.

As you well know, the investigating officer did an exhaustive assessment, visited all these countries, 150 witnesses and the like. He gave the investigation to me at the end of January. I reviewed it for about 3 weeks, and I turned it over to Chairman Dunford for him to pass it to Secretary Mattis. Secretary Mattis I believe now has it and will review it. As soon as he is done with his review, the families will be briefed. That has been our commitment all along, and we want to continue to that.

Then as soon as practical as the families have been briefed, we will come her to the committee and we will brief you, myself, the two-star who investigated it, and a civilian representative from OSD, and we will answer all of your questions at that time.

Senator PERDUE. Thank you, sir, and thank you for that investigation.

I would like for both of you to address the NDS briefly in your AORs. The most recent NDS obviously prioritized great power competition with China and Russia is a primary effort of DOD and directs a more resource sustainable approach to counterterrorism. General Votel, what does that mean in your AOR?

Parallel to that, we are in a competition for influence there. With China's One Belt One Road issue and all the money they are putting behind it and Pakistan and other areas in your AOR, what does the NDS change mean to your mission and AOR? Are you resourced to accomplish it?

General VOTEL. Thanks, Senator.

I think as we look at great power competition—for example, we look at a resurgent power like Russia—Russia is, as we know, not just a European problem. It is a global problem. I mean, they have influence globally. So they are certainly acting out in the area of responsibility that I have.

I think the first thing that the National Defense Strategy and the National Military Strategy that is being modified will recognize that aspect, that we have to be prepared to address these threats, not just in the areas in which they reside, but the areas in which they have influence.

Under General Dunford's leadership, we have developed between all of the combatant commanders I think very good plans and processes for how we will do that.

I think more specifically what it means for us in the region here, particularly as we look to potentially shift to other areas of the globe in accordance with the National Defense Strategy's prior-

ities—what it means for us is we will put a premium on the by, with, and through approach and having strong relationships with the people we have always had relationships with but also fostering new relationships.

Senator PERDUE. Excuse me, General, but this does not send a message to the Taliban that we are not open for business in Afghanistan. Does it?

General VOTEL. Absolutely not. Absolutely not. We remain very dedicated on this.

So we are focused on sustaining these relationships, on working with our partners, on becoming more interdependent with them, on becoming more mutually supporting with them among ourselves. That is what it means for me.

I am looking forward here in a couple weeks to meeting with a number of the chiefs of defense across the region to talk specifically about what the National Defense Strategy means and how we are going to approach it in the CENTCOM region.

Senator PERDUE. General Waldhauser, I know you have talked in the committee hearing already about China's effort in Africa, but I would like for you to address the NDS shift and what that means in your AOR specifically.

General WALDHAUSER. Senator, I think one of the things that the NDS shift has done is it has put a spotlight on China's activities on the continent, which have been ongoing for quite some time. But now with this strategy and with this notoriety, I think it gives an opportunity for us to actually have a discussion and bring to awareness what actually the Chinese are doing and how that impacts us.

But interestingly, on our future there, we are specifically told in the NDS to continue the by, with, and through approach. We are specifically told to work with partners and build capacity and continue the fight against counterterrorism forces.

So, in essence, the strategy frames the overall global posture. It frames for us prioritization, but it also tells us to essentially continue to build capacity on the continent so the Africans can take care of problems themselves and continue to degrade and disrupt the VEO fight so that those problems either stay localized and do not get out of the region or certainly to Europe or to our continent.

Senator PERDUE. Thank you, sir. Thank you both.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you.

Senator Hirono?

Senator HIRONO. Thank you, Mr. Chairman.

For both of you, I believe that some of my colleagues have already asked you about basically what I see as a hollowing out of the State Department at a time when we need to maintain that capacity. I just wanted to ask you, would you acknowledge that a proposed 25 percent cut in the State Department and a 12.5 percent cut to USAID funding from the fiscal year 2017 would not be helpful to your mission, either one of your missions?

General VOTEL. Senator, as I mentioned in my opening comments, we look at this as a team sport. We are very dependent upon our intergovernmental partners. Continuing the support for their activities is, I think, essential to the things that we do.

Senator HIRONO. Well, I would think that a 25 percent cut to the State Department would make it a lot harder for you to work with your partners. I think that that goes without saying, and I realize you have to be very tactful in your responses.

Let me get to some other questions.

General Votel, the President's South Asia strategy was announced nearly 7 months ago, and General Nicholson stated in November that new permissions granted within the strategy for Afghanistan means that the campaign is on the—quote—path to win. Yet, the Department of Defense Inspector General estimates that the Afghan Government is in control of only 18 percent of the districts in the country, and we are now in the 17th year of conflict in Afghanistan. The Director of National Intelligence stated that conditions this year are likely to deteriorate.

In your view, what exactly does winning mean in Afghanistan at this point? Can the addition of troops, even the much heralded security force assistance brigade, really make enough of a difference to reach the level of winning?

General VOTEL. Senator, I think we are on the right approach. I am aware of what you are citing there, but I would also highlight that the Government of Afghanistan also controls 64 percent of the population, has control and is able to protect 64 percent of the population.

Our strategy is really this year, using the additional authorities, the additional resources that we have moved within CENTCOM and those that are coming from the Department, to ensure that we are in a position to break the stalemate, to seize the initiative, to expand that population control, and to ensure that we have in this year provided the right security environment to support the upcoming parliamentary elections. I do think we are on the right track with this.

Senator HIRONO. That remains to be seen because a number of years ago when I went to Afghanistan, we were training the Afghan troops to be able to support their own military efforts and defense. At that time, we were told that we were on the right track, and here we are 17 years later. So it remains to be seen.

I want to get to what is going on in Yemen. The United Nations has called Yemen the worst humanitarian crisis in the world, and the United States continues to support the Saudi-led coalition. But the situation on the ground continues to be a stalemate. Your testimony mentions both the challenge of this crisis and the threat of Iran's proxy war in Yemen growing into a regional crisis.

Do you see a realistic path to hostilities in Yemen concluding? How long do you expect the hostilities to go on? Are there ways to deal with the humanitarian crisis immediately before a full cessation of hostilities?

General VOTEL. Well, Senator, to answer your question directly, I think there are our diplomats and there are other international parties under the UN that are trying to pursue the diplomatic solution to this and get to some kind of a peace process. That has been difficult to do at this particular point.

I guess what I would highlight first off is that what is happening in Yemen—there certainly is a humanitarian disaster taking place, but there is also a security disaster taking place, and there is a po-

litical disaster taking place. The people that are responsible for this are the Houthis, and they are the central nexus to all of this, enabled by Iran. They are refusing to cooperate in the political process. They are impeding humanitarian efforts that are being undertaken by Saudi Arabia and others here, and they are perpetuating the military situation with their support from Iran, which threatens to widen the conflict. So I think it is important to recognize that at the heart of these problems, humanitarian, security, and political, are the Houthis, enabled by Iran.

I would also say——

Senator HIRONO. I agree with you. I acknowledge that. What is the opportunity for any kind of U.S. leadership? Because we are enabling the Saudis to continue their battle there.

General VOTEL. Well, we are not parties to this conflict.

Senator HIRONO. But we are enabling the Saudis.

General VOTEL. But what we can do is we can help them, we can advise them, we can share our lessons learned on how to more effectively apply their capabilities, how more effectively to apply their partnerships that they have in conjunction with this.

I would also add, Senator, during my last visit to Saudi Arabia, one of the things I had an opportunity to do was to talk with them about how they are helping with the humanitarian aid or the humanitarian disaster situation. What I would share with you is what I learned is that they have a much more aggressive program in this area than even I had realized. They are not only going into the Port of Hodeidah, they are exploring other ports. They are bringing aid into airports in the central part of the country, and they are using their own ground routes across the border to do this. In many ways, they are pushing a lot of effort in this. It is not perfect. The situation is extraordinarily challenging here, but they recognize this and I do believe they are trying to take efforts to support this wherever they can with their coalition partners.

Senator HIRONO. I still do not know what the U.S. role there should be and is because we are very much a part of what the Saudis are doing.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you.

Senator Gillibrand?

Senator GILLIBRAND. Thank you, Mr. Chairman.

General Votel, I am deeply troubled by an incident that happened in Afghanistan on June 9th, 2014, in which five American troops and an Afghan soldier were killed by our own aircraft. This friendly fire incident was explored in a "60 Minutes" segment last November that highlighted deeply concerning elements about the event, including the assignment of a JTAC [Joint Terminal Attack Controller] who had been demoted and kicked out of an Air Force special operations unit for poor performance and then assigned to these Green Berets, and the lack of understanding by the B–1 crew and the unit on the ground about what the crew could see. Are you familiar with this incident, and if so, what can you tell me about how something like this can actually happen?

General VOTEL. Senator, I am familiar with the incident, although I will tell you I do not recall all the specific details of it right here today.

What I can tell you is that in all of these instances—and I know this from my own experience—that we do exhaustive reviews, exhaustive investigations to determine the cause of what happens. If people are to be held accountable, they are held accountable. Then we make efforts to try to apply the lessons learned out of this to limit this.

The unfortunate aspect of this business is that our people are operating oftentimes in confusing situations, making decisions in very dynamic environments, and unfortunately, things like this do occur. Our goal has been to minimize that by ensuring that we have the right people, they have the right training, and we have the right capabilities.

Senator GILLIBRAND. Do you think that B–1's are appropriate airframes for close air support?

General VOTEL. I think the B–1's have been very effective in that role as they played it in Afghanistan and other places.

Senator GILLIBRAND. Do they have the technology available to be able to see the strobe lights that are placed on the helmets of our troops?

General VOTEL. I believe they do.

Senator GILLIBRAND. Were any changes made as a result of this incident?

General VOTEL. Senator, again, I would take that question for the record, and we will go back and look and I will provide you a more thorough response to all the actions that we did take as a result of this.

Senator GILLIBRAND. Specifically infrared strobes. I have asked the Pentagon for the investigation of this incident and have not yet received it. Can I please have your commitment that you will help me get this information?

General VOTEL. You have my commitment, Senator.

Senator GILLIBRAND. Thank you.

[The information referred to follows:]

UNITED STATES CENTRAL COMMAND
OFFICE OF THE COMMANDER
7115 SOUTH BOUNDARY BOULEVARD
MACDILL AIR FORCE BASE, FLORIDA 33621-5101

21 May 2018

The Honorable Kristen Gillibrand
United States Senate
Russell Senate Office Building, Suite 478
Washington, DC 20510-3205

Dear Senator Gillibrand,

Thank you for your March 29, 2018 letter regarding the June 9, 2014 B-1 aircraft strike investigation.

Attached are my responses to each of your questions. I hope you find this information useful in communicating with your constituents. I can assure you that the safety of every deployed member within the Central Region has my utmost priority. Furthermore, any United States, coalition, or civilian casualty or loss of life is thoroughly investigated to determine relevant facts and potential corrective action.

Thank you again for your letter and for your continued support to the United States Central Command Soldiers, Sailors, Airmen and Marines. Please do not hesitate to contact me if I can provide additional information or assist you in any way.

Sincerely,

JOSEPH L. VOTEL
General, U.S. Army

Enclosed:
Detailed Responses to Senator Gillibrand

Enclosure

Enclosure

1. **Please make available the un-redacted investigation report and provide my office with all recommendations stemming from the investigation with regard to training, procedures, and aircraft.**

   RESPONSE: Due to the classification of the investigation report and under advisement, I cannot release the un-redacted report; however, my staff is coordinating with the Joint Staff to provide you with a briefing on the investigation findings.

2. **(Reference sniper pod capable of seeing Infrared (IR) strobes) What re-training has taken place since the incident occurred? Has this re-training been standardized across the military?**

   RESPONSE: Incorporating lessons learned from combat is essential to all Department of Defense (DoD) entities; however, this question related to sniper pods is best answered by the U.S. Air Force as the primary trainer and provider of B-1 bomber units and personnel.

3. **(Reference IR strobes emitted by ground forces) Has the military reconsidered this shortcoming in light of the June 9, 2014 incident? If not, why? What are the technical barriers to providing such upgrades to our aircraft? What is the estimated cost to do so?**

   RESPONSE: The U.S. Air Force, as the life cycle acquisition proponent for B-1 bomber platforms can best answer this question.

4. **During the hearing, I asked you whether B1s have the technology to see IR strobes emitted by our ground troops and you said, "I believe they do." However, it is my understanding that they do not. Can you please clarify this issue?**

   RESPONSE: I apologize for any confusion resulting from my testimony. As stated during testimony, I took the question for the record. Following my testimony, my Legislative Affairs Team made contact with your staff to correct the record. In fact, the IR strobes may not be seen by the B-1 platform. Consistent with the information your office previously received from United States Special Operations Command it is likewise my understanding that in most cases, IR strobes may not be detectable by most B-1 platforms due to a variety of factors. We continue to work within the DoD and with the Services to create interoperable systems and processes that provide us with advantages over the enemy on the battlefield and reduce risk to our forces. We continually evaluate and assess to ensure we incorporate lessons learned into training; this way, when we have gaps we are able to appropriately mitigate risk through a collective understanding of capabilities and limitations.

5. **To discuss these concerns in greater depth, I request a briefing from relevant leaders within U.S. Central Command or other appropriate representatives of the Department of Defense to members of my staff.**

   RESPONSE: I have directed my Legislative Affairs Team to remain engaged with their colleagues in the Department in order to provide your staff the information you need.

KIRSTEN E. GILLIBRAND
NEW YORK
SENATOR
RUSSELL SENATE OFFICE BUILDING
SUITE 478
WASHINGTON, DC 20510-3205
202-224-4451

COMMITTEES:
ARMED SERVICES
ENVIRONMENT AND PUBLIC WORKS
AGRICULTURE
SPECIAL COMMITTEE ON AGING

United States Senate
WASHINGTON, DC 20510-3205

March 29, 2018

General Joseph L. Votel, U.S. Army
Commander, United States Central Command
7115 South Boundary Boulevard
MacDill Air Force Base, FL 33621-5101

Dear General Votel,

During your March 13, 2018 testimony before the Senate Armed Services Committee, we discussed an incident that occurred in Afghanistan on June 9, 2014 when one of our own aircraft killed five American troops and one Afghan soldier. The Gold Star Families who lost loved ones in this tragedy have followed recent media coverage closely and I share their commitment to ensuring the safety of American servicemembers during future, similar circumstances. I write to continue our conversation with these four areas of concern:

1. Although the redacted investigation into this matter provides some clarity on the events of June 9, 2014, the recommendations remain completely redacted. While I recognize the sensitivity of findings specific to individual servicemembers, this incident exposes major lapses in training and potential problems with airframe used for close air support. Please make available the unredacted investigation report and provide my office with all recommendations stemming from the investigation with regard to training, procedures, and aircraft.

2. The investigation outlines serious shortcomings in the training provided to ground forces and the aircrew involved. Specifically, individuals both on the ground and in the air falsely believed the sniper pod was capable of seeing IR strobes when it was not. This alarming disconnect calls for systemic retraining. What retraining has taken place since the incident occurred? Has this retraining been standardized across the military?

3. My understanding is that the sniper pods attached to B1s do not have the capability to see the IR strobes emitted by our ground forces. Has the military reconsidered this shortcoming in light of the June 9, 2014 incident? If not, why? What are the technical barriers to providing such upgrades to our aircraft? What is the estimated cost to do so?

4. During the hearing, I asked you whether B1s have the technology to see IR strobes emitted by our ground troops and you said, "I believe they do." However, it is my understanding that they do not. Can you please clarify this issue?

As a member of the Senate Armed Services Committee, I firmly believe congressional oversight of the military is fundamental to our democracy. Ensuring transparency helps us to avoid future tragedies and best support our servicemembers, their families, and the nation. To discuss these concerns in greater depth, I request a briefing from relevant leaders within U.S. Central Command or other appropriate representatives of the Department of Defense to members of my staff. I look forward to your reply.

Sincerely,

Kirsten Gillibrand

Kirsten Gillibrand
United States Senator

In early February, Israel intercepted an Iranian drone in its airspace resulting in an Israeli response striking what it described as the command center from which Iran had launched the drone. An Israeli F–16 fighter jet involved in the offensive was downed by a Syrian antiaircraft fighter which prompted the Israeli military to respond against eight Syrian targets, including three aerial defense batteries and four Iranian positions that it described as part of Iran's military entrenchment in Syria.

What is your assessment of Iran's actions in Syria? Is it entrenching itself in the country?

General VOTEL. Well, Senator, I am extraordinarily concerned about Iran's role. I think they are trying to perpetuate their influence and certainly they are trying to create an access so that they can continue to support Lebanese Hezbollah and use that relation-

ship to threaten Israel. So I am extraordinarily concerned about that.

Senator GILLIBRAND. Do you feel that this incident reflected a change in the Iranian rules of engagement in Syria?

General VOTEL. I cannot speak for what the Iranian rules of engagement are. Certainly it was brazen and foolhardy for them to do this given the capabilities that Israel has.

Senator GILLIBRAND. General Waldhauser, I took a CODEL [Congressional Delegation] with a number of Senators to Africa a few years ago to assess where we were with regard to the growth of terrorism because, as you know, the precursors to 9/11 came out of Africa, whether it was the bombing of the embassy in Kenya or other terrorist attacks.

I am very concerned about what is happening in Africa. Not only your previous answers today but even the front page of The New York Times yesterday a story that more than 650,000 children under the age of five are severely malnourished in northern Kenya, Somalia, and Ethiopia and that famine throughout Africa is causing 12 million people to rely on food aid. You combine that with the effects of global climate change specifically on the ability of many countries within Africa to grow their own food and provide for food. It is creating crime. It is creating more terrorism. You add to that what is happening with the Boko Haram efforts to steal children, to have trafficking of females, and to destroy whole communities. I am really concerned about the direction of terrorism and its growth throughout Africa.

Can you give me guidance on how these changes are impacting our mission and our posture in the area of your operations?

General WALDHAUSER. Senator, some of the numbers that you stated are certainly overwhelming. When it comes to the African continent, unfortunately those numbers are sometimes the order of the day. Last year, for example, inside Somalia, there were over 6 million people who were food insecure. This year it is going to be around 5 million. That is just in that region.

I would say from the climate perspective, we have seen the Sahel, the grasslands of the Sahel, recede and become desert almost a mile per year in the last decade or so. This has a significant impact on the herders who have to fight, if you will, for grassland, waterholes, and the like. So these environmental challenges put pressure on these different organizations. Some are VEO. Some are criminal. But it puts pressure on these organizations just for their own livelihood.

Consequently in areas like northern Mali, ISIS–West Africa in the northern part of Niger, these are areas that are very concerning to us, and this is why we are trying to work so closely with those countries there so that they can maintain security, that they can at a minimum keep these challenges inside those particular boundaries. But there are some significant challenges, and the numbers sometimes in Africa can overwhelm you.

Senator GILLIBRAND. Well, thank you, Mr. Chairman.

Senator INHOFE. Thank you.

We do not have any more members, and hopefully we will not have any more members.

But let me—just for clarification, first of all, I did not want to be discourteous in that one interruption that I had during the course. But I think it is important because this is something that can be changed.

I think what Senator Rounds is getting to is that we are all aware that prior to 10 years ago, the continent of Africa was divided into three different commands, PACOM [United States Pacific Command], EUCOM, and CENTCOM. It completely surrounds Africa.

Now, when we decided to have AFRICOM, still under its construction, we had both allocated and assigned troops in PACOM, allocated and assigned troops in EUCOM, allocated and assigned troops in CENTCOM, but only allocated troops in AFRICOM. Now, that is the difference.

I would still think that should be open to discussion because we have seen a lot of things. LRA [Lord's Resistance Army], for example. When we had problems, we had to bring in troops from other places.

It is my intention and I am sure it is Senator Rounds' intention to put that in the focus to see if we have the right blend there or if, in fact, we should have assigned troops in AFRICOM.

Now, do you have any comment to make on that?

General WALDHAUSER. Senator, I think to a large degree we are saying the same thing. I mean, the technicality of assigned and allocated to those who do not do this on a daily basis may not seem like a big deal, but allocated is something that you might be able to count on all the time but you may not. Assigned forces, obviously, you can count on.

Senator INHOFE. Exactly. I am sure that is what he was getting to. I think we are in total agreement on that.

Any other thoughts?

Senator REED. No, thank you.

Senator INHOFE. We are adjourned.

[Whereupon, at 11:31 a.m., the committee was adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JONI ERNST

ILLICIT TRAFFICKING

1. Senator ERNST. General Votel, we know that illicit trafficking has been used to some extent to finance terrorist groups. Would you agree that as we get better at choking off traditional financing mechanisms used by terrorists, illicit trafficking is becoming a greater concern?

General VOTEL. [Deleted.]

2. Senator ERNST. General Votel, what specific commodities are being illicitly traded to finance terrorist groups within the CENTCOM AOR?

General VOTEL. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

COAST GUARD CENTCOM PATROL BOAT SUPPORT

3. Senator SULLIVAN. General Votel, the Coast Guard has six patrol boats working in direct support to CENTCOM. Are they valuable for the missions you have in the Persian Gulf?

General VOTEL. [Deleted.]

4. Senator SULLIVAN. General Votel, these patrol boats are well past their service life and need to be decommissioned soon. Have you requested new Coast Guard assets to replace these patrol boats?
General VOTEL. [Deleted.]

5. Senator SULLIVAN. General Votel, the Coast Guard has replaced their legacy patrol boats with new Fast Response Cutters (FRCs). Would they be a good fit for the missions in CENTCOM?
General VOTEL. [Deleted.]

6. Senator SULLIVAN. General Votel, the Navy also has small surface combatants (Patrol Coastal, PCs) that perform similar missions alongside the Coast Guard patrol boats. The PCs are also scheduled for a phased decommissioning which begins in 2022. However, the Navy does not plan to replace these with similar assets, instead, they plan to replace this capability with some (fewer number of) Littoral Combat Ships (LCS). However, LCS may not necessarily provide the right capability for the CENTCOM AOR. Does the Navy plan to provide you new ships to maintain this capability? Is LCS the right platform for the missions you have?
General VOTEL. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR DAVID PERDUE

SYRIA—CHEMICAL WEAPONS

7. Senator PERDUE. General Votel, Syrian President Bashar al Assad has committed many atrocities since the beginning of the Syrian Civil War, but one of the most disturbing is his use of chemical weapons against civilians. As we've seen with the recent CW attack in Idlib province, despite the Russian-backed plan to rid Syria of chemical weapons in 2013, Bashar Assad still has them and still uses them, and has not declared all the elements of its chemical warfare program to the OPCW. Recently, a United Nations Panel of Experts report was released that connects North Korea to the Syrian Government's use of chemical weapons against its own people. Disturbingly, the report uncovers that these heinous actions were exacerbated by North Korean technicians with specialized knowledge of chemical and ballistic-missile technology, who have repeatedly visited Syria over the last 2 years in Barzeh, Adra and Hama. Do you believe that without DPRK military assistance, President Assad would have been less able to inflict chemical weapons atrocities on his own people?
General VOTEL. [Deleted.]

8. Senator PERDUE. General Votel, are there ways the U.S. and partner forces can halt this deadly cooperation?
General VOTEL. [Deleted.]

9. Senator PERDUE. General Votel, given that the Assad regime has "made significant territorial gains in central and eastern Syria," do you believe there will be an increase in chemical weapons usage?
General VOTEL. [Deleted.]

10. Senator PERDUE. General Votel, do you believe that the lack of American intervention against the Assad regime in Syria has empowered and emboldened Assad to continue on his path of detention, torture, and extermination of his own people?
General VOTEL. [Deleted.]

JSTARS ISR CAPABILITY

11. Senator PERDUE. General Votel and General Waldhauser, in the past, I have written to both of you to inquire about the importance of the JSTARS platform to operations in your AORs. As you know, JSTARS is an Air Force platform that provides critical intelligence, surveillance, and reconnaissance (ISR), ground targeting, and battlefield command and control capabilities to all branches of our military in multiple regions of the world. General Waldhauser, your command replied to us that "JSTARS' moving target indicator data, when fused with the data collected by cross-cued platforms, enhanced geolocation accuracy of ISIS activity in Libya, allowed new target discovery, and helped confirm ISIS presence in areas where previously we had low confidence, single-source reports." General Votel, you wrote that "we employ JSTARS capabilities in our combat areas 12 months a year. Any delay in providing

this critical capability is detrimental to our mission." As you know, the Air Force has zeroed-out its FY19 recapitalization of the JSTARS fleet, when just last year this platform was the number 4 acquisition priority of the Air Force. While I agree that we eventually need to move to the new "system of systems" in the future, I'm very concerned we'll see critical gaps in ISR (especially with GMTI) for you and for troops on the ground. The Air Force is planning to take the JSTARS platform offline without acquiring more ISR assets. Have they explained to you how they plan to bridge the capability gap in GMTI–ISR that will arise in the upcoming 3–12 year period? (If possible, I would appreciate a classified and unclassified response)

General VOTEL. [Deleted.]

General WALDHAUSER. [Deleted.]

12. Senator PERDUE. General Votel and General Waldhauser, what does this potential gap mean for you and your combatant commands' ISR requirements?

General VOTEL, [Deleted.]

General WALDHAUSER. [Deleted.]

13. Senator PERDUE. General Votel and General Waldhauser, how well are your ISR requirements being met currently?

General VOTEL. [Deleted.]

General WALDHAUSER. [Deleted.]

14. Senator PERDUE. General Votel and General Waldhauser, in your experience, what mission-critical capabilities can be met with JSTARS that can't be met with another ISR platform?

General VOTEL. [Deleted.]

General WALDHAUSER. [Deleted.]

15. Senator PERDUE. General Votel and General Waldhauser, could you provide me an example of a specific mission that you have commanded whose success depended on the JSTARS?

General VOTEL. [Deleted.]

General WALDHAUSER. [Deleted.]

16. Senator PERDUE. General Votel and General Waldhauser, how important to you, as a combatant commander, is the role of JSTARS airborne battle management and command and control, in addition to being an ISR provider?

General VOTEL. [Deleted.]

General WALDHAUSER. [Deleted.]

REASSURANCE OF GULF PARTNERS AND ALLIES

17. Senator PERDUE. General Votel, former Secretary Gates gave a mixed assessment of the nuclear deal with Iran, but critiqued the overall policy approach because of the lack of a strong signal that the United States remains committed to Iran's geopolitical containment. He said, quote, "We cut deals with the Soviets [on nuclear weapons] but at the same time pursued very aggressive policies" to counter Soviet meddling around the world. "I don't know why we didn't do the same things with Iran." The result, Gates said, is that allies like the Saudis and Israelis now fear the United States is deliberately acquiescing in Iran's emergence as the new hegemon in the region. Do you think our Gulf Cooperation Council partners have increased doubt about the commitment of the United States to their stability and security since the nuclear agreement with Iran? How about our other allies in the region like Israel, Jordan, and Egypt?

General VOTEL. [Deleted.]

18. Senator PERDUE. General Votel, have you sensed a change in Gulf relations since the transition to a new administration? What kinds of steps could reassure them after an extended period of uncertainty?

General VOTEL. [Deleted.]

19. Senator PERDUE. General Votel, how does the ongoing GCC rift impact your military operations in the region? How does the rift open the door for adversaries, like Iran?

General VOTEL. [Deleted.]

20. Senator PERDUE. General Votel, how has Qatar stepped up as a partner since 9/11, and more recently, since the embargo?

General VOTEL. [Deleted.]

NORTH KOREA AND AFRICA

21. Senator PERDUE. General Waldhauser, as was reported last week, President Trump is planning to engage with North Korean leader Kim Jong-un over denuclearization of North Korea very soon. Unlike past failed negotiation attempts with North Korea, it is imperative that we keep our campaign of maximum pressure, including sanctions, on North Korea, and don't fail to take our eye off of the ball. Various countries in the African continent are among those who have been dealing with the Kim regime for decades. According to reports, trade between North Korea and African countries was at $216.5 million a year on average between 2007 and 2015. Construction agreements with various countries make up a significant portion of this amount, mostly through a North Korean state-owned enterprise called Mansudae. A UN Panel report that came out in September accused countries like Tanzania and Mozambique of contracting Pyongyang to provide support for their air missile systems. North Korean entities have built arms factories in some countries while providing military training to others, both in clear violation of the sanctions regime. It is vital that the United States steps up pressure on African states to cut longstanding military and diplomatic ties with North Korea as part of its push to squeeze the funding of North Korea's missile and nuclear programs. What actions has AFRICOM taken to monitor and combat North Korean sanctions-evasion activity on the continent?

General WALDHAUSER. AFRICOM monitors North Korean activities in cooperation with the United States missions on the continent and is currently in the process of operationalizing our tasks associated with the Global Campaign Plan—North Korea to do even more to counter North Korea's activities in Africa. We are committed to supporting the Department of State and the maximum pressure policy using all tools available. This includes ensuring all our African partners are aware of the activities prohibited by UN Security Council Resolutions, as well as the degree to which North Korea will abuse its diplomatic, military, and trade relations to evade sanctions, often undermining the reputation of governments hosting its embassies and trade missions, and exposing these unwitting host governments to international penalties.

22. Senator PERDUE. General Waldhauser, how can the United States ensure and incentivize African compliance with United States and International sanctions on North Korea?

General WALDHAUSER. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR TIM SCOTT

RUSSIAN BEHAVIOR IN THE MIDDLE EAST

23. Senator SCOTT. General Votel, with heavy assistance from United States and coalition partners, Iraq seems to for the most part have defeated ISIS and retaken most of the territory lost to that terrorist organization starting in 2014. But the situation in the region is only growing more complex. Russian involvement in Syria is growing, as Vladimir Putin works to ensure the survival of Bashar Assad and his murderous regime. Syria is Russia's only remaining ally in the Arab world and it is clear to me that Putin and Russia are investing a great deal in Syria and the Assad regime's survival. Iran continues to exert its malign influence throughout the region, from supporting the Houthi's in Yemen, to continued backing for Hezbollah in southern Lebanon. Competing interests in the Middle East are myriad, and I think it would be too easy for the United States to find itself stretched, distracted, and ultimately focused on the wrong issue. In the midst of this complexity, I am most concerned about Russia's role in the region. Ties between Russia and Turkey, a member of NATO, appear to be growing and solidifying. Russian mercenaries are fighting alongside Syrian troops, while Russian aircraft support them from above.

General Votel, given the complicated environment, how do you prioritize your efforts in the region?

General VOTEL. [Deleted.]

24. Senator SCOTT. General Votel, the Washington Post reported on February 22nd that the Russian Foreign Ministry acknowledged "several dozen" Russians were killed when they attacked a position held by the United States and its allies. How far will Russia go to defend the Assad regime and ensure its survival?

General VOTEL. [Deleted.]

25. Senator SCOTT. General Votel, should we be concerned about Russia implementing its "escalate to dominate" strategy in Syria and threatening the use of low-yield nuclear weapons to ensure the survial of the Assad regime?
General VOTEL. [Deleted.]

26. Senator SCOTT. General Votel, if Russia does pursue its "escalate to dominate" strategy in the Middle East, how do you think Israel will respond?
General VOTEL. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

WOMEN, PEACE, AND SECURITY (WPS) INITIATIVE

27. Senator SHAHEEN. General Waldhauser and General Votel, how receptive have our partners in your Area of Responsibility been to efforts to implement the Women, Peace, and Security initiative and how has the WPS assisted you in accomplishing your Building Partner Capacity (BPC) missions?
General WALDHAUSER. We seek opportunities to integrate WPS initiatives within our building partner capacity missions by: Supporting defense institutions that facilitate the capacity building of women as well as men in African partner defense forces; Ensuring our capacity building programs include requirements for the protection of civilians, specifically women and girls; Assisting the development of training and accountability mechanisms within African partner defense forces that facilitate professionalism and prevent sexual and gender based violence, to include sexual exploitation and abuse. The WPS initiative strives to inculcate in our partners that women and men have the necessary talent and capability to improve their armed forces. However, due to competing priorities and varying interpretation of the global WPS mandate, challenges remain on consistently implementing WPS across the continent. Despite these challenges, the majority of our partners are willing to send representatives to USAFRICOM-sponsored WPS events. Below is a summary of some of the most recent WPS-sponsored or inclusive events: USAFRICOM Intelligence Directorate facilitated a two-part all-female intelligence officer training course attended by Burkina Faso, Cameroon, Chad, Mali, Niger, Nigeria, Senegal, and Tunisia. USAFRICOM Office of Legal Counsel hosts an annual colloquium attended by military justice personnel from 25 African countries which has twice focused on preventing and responding to sexual exploitation and abuse as the main topic. USAFRICOM leverages its Global Peace Operations Initiative (GPOI) funding to sponsor a biannual Gender in Peace Support Operations attended by African troop contributing countries to the UN. In 2017, Special Operations Command Africa began including a WPS Seminar as part of its annual Flintlock exercise to highlight the importance of women's leadership and understanding gender dynamics to countering violent extremist organizations. The 2018 WPS Seminar was attended by Burkina Faso, Cameroon, Chad, Ghana, Mali, Niger, Nigeria, and Senegal. In 2014 and 2015, United States Army Africa hosted a Regional Gender Mainstreaming Seminar attended by Botswana, Malawi, Mozambique, Namibia, Senegal, Sierra Leone, and Zambia to discuss best practices for integrating women into the force. Increasingly, some partners are requesting the integration of WPS into their bilateral BPC activities with USAFRICOM. For example, in January 2018, United States Air Forces Africa began a four-phased engagement to support Mali's force generation and personnel readiness processes for the Malian Air Force, a key element of which is the development of a sexual harassment and assault policy. Additionally, Zambia leveraged GPOI funding to develop a Female Engagement Team Training in February 2018 to prepare approximately 100 female soldiers to deploy to the United Nations Multidimensional Integrated Stabilization Mission in the Central African Republic. Through our cooperative relationships with our interagency, European, and multilateral partner organizations, such as the UN and African Union, we continue to encourage and support the integration of WPS initiatives through our collective BPC activities.
General VOTEL. [Deleted.]

AID TO PAKISTAN

28. Senator SHAHEEN. General Votel, in your advance statement for the record, you indicated that "achieving long-term stability in Afghanistan and defeating the insurgency will be difficult without Pakistan's support and assistance." The administration recently suspended security assistance aid to Pakistan due to concerns about Pakistan's provision of sanctuary and support to militant and terrorist group that target United States personnel and interests, yet Pakistan and the United

States are partners in targeting other terrorist groups. What has been the impact of the suspension of security assistance aid to Pakistan and are you concerned about its long-term impact on our military-to-military relationship with Pakistan?

General VOTEL. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

INFLUENCE OF CHINA

29. Senator HIRONO. General Votel, you mentioned in your written testimony increased Chinese investment and attempts to gain influence in the Central region of the world. China appears to have a long-term plan that it is executing now. What are the short- and long-term risks to the Central region from increased Chinese investment and influence campaigns?

General VOTEL. [Deleted.]

ISR DEFICIT

30. Senator HIRONO. General Votel and General Waldhauser, one of the common themes we hear from the regional combatant commanders is the constantly increasing demand for Intelligence, Surveillance and Reconnaissance (ISR) assets. Both General Scaparotti and Admiral Tidd testified this year that large percentages of these requirements go un-met. What percentage of your general ISR requirement is regularly met?

General VOTEL. [Deleted.]

General WALDHAUSER. USAFRICOM's ISR requirements are fulfilled at ~30 percent of its Joint Staff validated, but mostly unsourced, requirements. GFM-sourced solutions provide ~20–25 percent; USAFRICOM attempts to overcome this deficit using the HAC–D / USD(I) ISR Transfer fund to obtain and maintain an additional ~5–10 percent.

31. Senator HIRONO. General Votel and General Waldhauser, what is the ISR capacity of allies and partners in your region?

General VOTEL. [Deleted.]

General WALDHAUSER. [Deleted.]

32. Senator HIRONO. General Votel and General Waldhauser, are you able to effectively leverage the ISR capacity of allies and partners to meet your requirements?

General VOTEL. [Deleted.]

General WALDHAUSER. [Deleted.]

SCOPE OF MISSIONS IN AFRICA

33. Senator HIRONO. General Waldhauser, your written testimony states that there are about 7,200 personnel in Africa on any given day. How does that number of personnel compare to 2015 or 2016?

General WALDHAUSER. The average number of personnel on any given day in Africa in 2015 was 5,540. This is an increase from 2015 to 2018 of 1,660 personnel. The average number of personnel on any given day in Africa in 2016 was 6,143. This is an increase from 2016 to 2018 of 1,057 personnel. For reference, the average number of personnel on any given day in Africa in 2017 was 6,595. This is an increase from 2017 to 2018 of 605 personnel. Over the past four years, the increase in personnel is primarily due to our efforts and engagements in Niger, Somalia, and Tunisia. Personnel in Niger increased from approximately 300 to 900 from 2015 to 2017. This increase in personnel is principally tied to airfield construction and activities in Agadez which began in March of 2016. Thus, the components which saw the largest increase were United States Army Africa (USARAF) and United States Air Forces Africa (AFAF). The seemingly large increase in personnel in Somalia from approximately 50 to 600 from 2015 to 2017 is attributed to two main reasons. First, between 2015 and 2017, all major force operations in Somalia transitioned from Joint Task Force (JTF) 94–7 to Special Operations Command-Africa (SOCAF). Based on the manner in which Task Force 94–7 deployed into theater not all of the Task Force 94–7 personnel were accounted for and thus not likely included in the initial number of 50 personnel in 2015. Moreover, prior to 2015, Task Force personnel numbers were not included in USAFRICOM personnel totals. Additionally, a new United States Code § 333 Program stood up to train Somali National Army DANAB Advanced Infantry Battalions in Baledogle. This new training program required additional U.S. personnel. Second, as part of the Task Force 94–7 and SOCAF transition, Combined Joint Task Force Horn of Africa (CJTF–HOA) was

tasked to assume Base Operating Support—Integrator from Task Force at Forward Operating Base Baledogle and Galcayo. As part of HOA's assessment, the CJTF–HOA Commander determined the contracted security force Task Force utilized to secure the Baledogle base posed too much risk to SOCAF forces and subsequently replaced the contracted security force with a sizeable and traditional DoD Security Force. In sum, with the transfer of responsibility from Task Force and their accompanying contracted security personnel, the components which saw the largest increase were Special Operations Command-Africa in Mogadishu, and the Combined Joint Task Force Horn of Africa (CJTF–HOA) in Baledogle and Galyco. Personnel in Tunisia increased from approximately 30 to 120 from 2015 to 2017. This primarily was a result of new basing of ISR aircraft and associated operations and security personnel in Tunisia. These ISR assets support operations in Libya and Tunisia as well as countering regional violent extremist organizations. Consequently, the component which saw the largest increase was AFAF.

34. Senator HIRONO. General Waldhauser, over the next year, do you expect the personnel commitment to AFRICOM to grow?

General WALDHAUSER. Currently, USAFRICOM does not anticipate any growth in personnel over the next year. The new National Security and Defense Strategies reprioritizes near-peer competition against global state actors and Joint Force Readiness above Counter Violent Extremist Organization (C–VEO) contingency operations. USAFRICOM supports these strategies with a focus on building partner capability. By investing in training and investing in the operational needs of our partnered security, U.S. personnel and unit commitments on the continent may likely decrease. While there may be instances in time when we might see a short term increase of deployed forces to support U.S.-directed operations, we expect a reduction of forces and personnel over the next several years.

35. Senator HIRONO. General Waldhauser, of the 7,200 personnel, how many are directly involved in countering Violent Extremist Organizations, ISIS–West Africa and Boko Haram?

General WALDHAUSER. In USAFRICOM's "By, With, and Through" framework, where the vast majority of operations in Africa are conducted "by" our partners on the ground, USAFRICOM provides approximately 2,500 servicemembers who directly Advise, Assist, and Accompany partner force units and enable these operations by ensuring the operation is resourced deliberately with supporting ISR, fire support, CASEVAC, and QRF enablers.

36. Senator HIRONO. General Waldhauser, is the force currently in Africa sufficient to contain the threat as it stands today?

General WALDHAUSER. The current allocation of United States military force on the continent is sufficient to enable our African partners to contain most VEO threats and degrade their ability to conduct external operations. We employ a "By, With, and Through" strategic framework where the vast majority of security operations in Africa are conducted "by" our partners on the ground. They execute these operations "with" our assistance and enablement, and "through" established mutually supporting partnership agreements. In the context of this framework, we have sufficient forces to accomplish the mission. The U.S. does not have enough deployed forces to contain the various VEO networks across the continent. Countering the numerous VEOs requires cooperative engagement with our partners. These partners are not limited to our African teammates, but include critical allies such as France and our continued support to their ongoing operations in Mali and the greater Sahel.

DJIBOUTI PORT TERMINAL SEIZURE

37. Senator HIRONO. General Waldhauser, related to Djibouti's recent seizure of a port terminal, there are reports indicating that President Guellah could turn it over to the Chinese as a gift or in lieu of repaying debt as the Chinese have provided over $1.4 billion in financing to improve the local infrastructure. You've stated that the "consequences could be significant" for the United States and specifically your Command. This move also comes in the wake of China establishing a base in Djibouti—located a few miles from our only permanent base in Africa, Camp Lemonnier, which hosts 4,000 military and intelligence personnel and serves as a key outpost for counterterrorism operations targeting AQIP, al-Shabaab, Boko Haram, the Lord's Resistance Army and ISIS. Like the port facility recently seized, the U.S. operates Camp Lemonnier under a 20 year lease. What's to stop President Guelleh from breaking that agreement if the Chinese want to call in another debt?

General WALDHAUSER. While we do not believe China could successfully pressure the government of Djibouti to break the lease agreement, we are carefully monitoring Chinese activities and its emergent military presence in Djibouti and elsewhere in Africa. The United States has a very strong partnership with Djibouti that has been mutually beneficial to both the United States and the government and people of Djibouti. In 2014, the United States signed a new international agreement that serves as a 20-year lease for Camp Lemonnier at the cost of $63 million per year (accounting for 8 percent of the Djibouti's Government revenue), with an option to extend the lease through 2044. Since 2002, DoD has invested almost $1 billion in developing Camp Lemonnier. Camp Lemonnier has awarded over $40 million in contracts since 2015. The Djibouti First legislation, which was expanded to Africa First legislation in 2017, has given us an important, and popular, tool to demonstrate directly to the people of Djibouti the benefits of partnering with the United States. The government of Djibouti, including President Guellah, has made clear they value their relationship with the United States, even as they expand their relationship with China.

38. Senator HIRONO. General Waldhauser, can you expand on the "consequences" for the United States and our allies should Djibouti continue to act based on Chinese interests?

General WALDHAUSER. Djibouti is located on the Bab el Mandeb Straits which is a geo-strategic chokepoint at the southern entrance to the Red Sea. Almost all of the maritime trade between Europe and Asia transits this point. Djibouti has no natural resources and is selling its one unique resource of strategic location. Djibouti is heavily indebted to China with estimates as high as 75 percent of Djibouti total GDP tied up in Chinese debt. This factor makes Djibouti highly vulnerable to Chinese influence. The Djiboutian port is the largest employer and biggest source of revenue in Djibouti. There is concern the Chinese could eventually control the Djiboutian Port and the Strait. This factor, coupled with their already established military forces at the Chinese Naval base in Djibouti, places the Chinese in a controlling position at one of the most critical strategic locations in the world for both commerce and power projection. The loss access to the Djiboutian Port would hinder Camp Lemonnier, tenant commands, and Naval Ship operations dependent on in-port replenishments. Camp Lemonnier relies on the port of Djibouti for replenishments of sustenance, construction material, fuel, military equipment end items, and medical supplies. To fill the supply chain gap created by the loss to the port, reliance would shift immediately to strategic airlift assets. The nearest available port capable of handing the throughput, in a permissive environment, is the Port of Mombasa. Utilizing this port poses a time distance challenge by adding an additional 2450 kilometers of transit from source to warfighter. The transfer of maritime shipments is important to United States operations in Djibouti and East Africa. The United States base in Djibouti is the only permanent United States military base in Africa and is critical to United States counter-terrorism efforts. Conflicts in nearby Yemen and Somalia have also turned Djibouti into a critical staging ground for military operations in these countries. Chinese control of the port could also open the door for future Chinese-Russian cooperation.

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, MARCH 15, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

UNITED STATES PACIFIC COMMAND

The committee met, pursuant to notice, at 9:30 a.m. in Room SD–G50, Dirksen Senate Office Building, Senator James M. Inhofe, presiding.

Committee members present: Senators Inhofe, Wicker, Fischer, Cotton, Ernst, Tillis, Sullivan, Perdue, Sasse, Reed, Nelson, McCaskill, Donnelly, Hirono, Kaine, King, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Our meeting will come to order this morning to hear testimony from one of my favorite people, Admiral Harris. I was so excited to be there at the time that everyone was paying tribute to you in your upcoming retirement. I stumbled into that big party of people who were rejoicing the great contributions you have made. We appreciate so much having you here. I only regret that it'll probably be your last time here. The committee would like to congratulate you along with me.

Chairman McCain has asked me to submit a statement for the record. I'm going to go ahead and quote him at this time, "The National Defense Strategy offers a new framework for thinking about the global challenges we face and that places China squarely at the top of our priority list. As we turn our focus to great-power competition and near-peer threats, we must face up to the true nature of the reality of Chinese power and ambition."

[The prepared statement of Chairman McCain follows:]

PREPARED STATEMENT BY CHAIRMAN JOHN MCCAIN

The evolving security situation in the Indo-Pacific presents a dynamic environment for safeguarding America's deep and enduring interests in the region. The National Defense Strategy offers a new framework for thinking about the global challenges we face and places China squarely at the top of our priority list. As we turn our focus to great power competition and near-peer threats, we must face up to the true nature and reality of Chinese power and ambition.

For decades, many Americans hoped that China's "peaceful rise" would lead Beijing to assume a role as a "responsible stakeholder" in the rules-based international

order. But China's Communist Party leaders have made a different choice. China's hostility to the rules-based order—which has been increasingly brazen under Xi Jinping—threatens to undermine peace and prosperity in the Indo-Pacific. However, this is not merely a regional issue. As a Pacific power, this reality threatens America's interests as well. I am convinced the only successful path to preserving the rules-based order in the Indo-Pacific—and the peace and prosperity it has generated—is to renew America's leadership in the region in full.

In the military domain, China's rapid modernization has been aimed at developing capabilities that directly challenge the American way of war. They have succeeded in eroding our conventional military overmatch and countering our ability to project power. While America's military remains the most powerful on earth, urgent action is required to keep to keep it that way. America no longer has the luxury of taking its military advantage for granted.

We must think differently about capabilities and concepts, forward basing and force posture, and logistics and mobilization. We must prepare for future threats with an eye to how the rapid diffusion of advanced technologies has changed the landscape of warfare. We must recognize our adversaries are competing across the entire spectrum of conflict, which requires us to be more adaptive and innovative in order to expand the competitive space.

While the long-term challenge of strategic competition with China looms, the most immediate threat in the Indo-Pacific is the situation on the Korean Peninsula. Last year in the National Defense Authorization Act, Congress required the President to submit a report setting forth the United States strategy for North Korea. The administration missed that deadline this week.

A North Korean missile with a nuclear payload capable of striking the United States Homeland is no longer a distant hypothetical—it is an imminent danger. The threats to our allies and partners and U.S. military bases in the region are even more severe. While I welcome any efforts to resolve the situation diplomatically, I remain skeptical of any assurances that North Korea is ready to denuclearize after decades of pursuing its current program at grave cost.

At the core of every issue in this important region is the reality that securing our interests relies on working closely with the countries who share them. I am encouraged that the new National Defense Strategy commits to strengthening United States alliances and partnerships in the Indo-Pacific. In addition to our long-time allies in Japan and South Korea, Secretary Mattis has focused his efforts on developing and deepening partnerships with India, Indonesia, and Vietnam—where we recently witnessed an historic port call by a United States aircraft carrier that demonstrates just how far we have come. I welcome these efforts because ultimately, no policy for deterring aggression, maintaining stability, and achieving prosperity in the region will be successful without our allies and partners.

As much as I am encouraged by efforts to provide more funding to meet our military requirements and to improve defense cooperation across the region, I fear these efforts will be in vain unless the United States takes action, especially in the economic sphere, to demonstrate that we are not a declining or disinterested power—and that we remain committed to playing our historic role as a Pacific power. That is why I urge the Trump administration to show the courage required to change course by reentering negotiations to complete the Trans-Pacific Partnership. We also need to cease threats to withdraw from existing trade agreements, such as the Korea-United States Free Trade Agreement. We need to ensure that America's allies and partners in the Indo-Pacific are not targeted by steep steel and aluminum tariffs.

Finally, on the occasion of today's hearing, let me express my deepest thanks to Admiral Harris, who has served our nation honorably for decades, and has been a faithful steward of the post my father once held. Admiral, we thank you for your friendship and leadership. We wish you well in retirement and as you continue to serve our nation as Ambassador to Australia.

Senator INHOFE. For evidence—unquote—for evidence that Secretary Mattis identified priorities in the NDS [National Defense Strategy] correctly, we need to look no further than what's happening with China. Of course, everyone's familiar with Russia and with the threats that are out there with the—North Korea, but they haven't thought, really, about China in the framework that we have now seen it from our trip out there. I was recently out with members of the committee, and we had a chance to see it firsthand. I'm hopeful that our recent agreement to increase United States

defense spending will help us to recover from our current readiness and modernization crisis and prepare for future threats in Asia and beyond.

I recently returned from that trip, and, with several members of this committee, we visited the Philippines, Taiwan, South Korea, and Japan. We observed firsthand the threat that—Chinese expansionism in the region, and we need for American leadership to assure, if necessary, to defend, our allies.

Admiral Harris, the committee looks forward to your very candid assessment of the threat that's out there. We appreciate your being here with us.

Senator Reed.

STATEMENT OF SENATOR JACK REED

Senator REED. Well, thank you, Mr. Chairman.

Admiral Harris, thank you for being here to testify on behalf of yourself and for General Brooks. It's unfortunate General Brooks wasn't able to join us, but we appreciate the operational needs on the Korean Peninsula. I also believe it's the committee's expectation that General Brooks will testify before us as soon as it is feasible for him to return to Washington.

In Asia, we are faced with two very different problem sets that will both require long-term, integrated, whole-of-government strategies. I am concerned that the administration has not developed the comprehensive strategies for the threat posed by North Korea or our long-term competition with China. Both problem sets are interdependent. For example, I firmly believe that if we preemptively attack North Korea, we will forfeit any ability to prevail in our long-term competition with China. If we mishandle that competition, we will be poorly positioned to put the type of pressure on North Korea that is necessary to deter and contain the threat that the regime poses to the United States and our allies in the region.

With regard to North Korea, the recent announcement that President Trump will be meeting with Kim Jong-un has led to cautious optimism about a path to a resolution in this crisis. Success in the proposed talks will require consistent strategic messaging, close coordination with our partners in China, and increased diplomatic capacity and empowerment for the experts at the State Department and other agencies. I am concerned that some of the critical players necessary for effective negotiation are not in place, since we are still lacking an Ambassador for South Korea, the Secretary of State is in transition, and the top diplomat who had the most experience with the North Koreans recently resigned. Additionally, there should be significant pre-negotiations with the Republic of Korea, Japan, and China to make sure that we are presenting a comprehensive position that has buy-in from all of the relevant stakeholders. I am concerned that there's a very short window of time for all of this work to take place.

We should all be realistic about the prospects for negotiations. Given North Korea's all-consuming drive for strategic nuclear capabilities and its history of failing to adhere to negotiated agreements, we can all agree that the likelihood of either near-term or long-term success for the talks is relatively low. Even in the event that North Korea agrees to verifiable denuclearization on terms

that we can accept, there is a strong likelihood that a long-term deterrence-and-containment strategy will likely need to be in place for decades to come.

Finally, it is critical that, if negotiations are not successful, the administration does not pivot to preparing for a preemptive war with North Korea. I believe there is growing agreement that war is not an acceptable alternative to sustaining pressure on North Korea, preventing proliferation and deterring aggression. The talks should be seen as an opportunity to curtail the regime's nuclear missile programs while still maintaining the maximum pressure campaign.

Admiral Harris, I'm looking to hearing your views on this latest development and the implications for U.S. national security and the security of our allies in the Pacific region.

China is the largest economic, military, and global competitor that we face. It is critical that this administration develop a comprehensive strategy that focuses on all these areas of competition. First and foremost, the United States needs a better global messaging campaign to counter Chinese influence in the region. For years, China has been circulating a narrative that the West is in decline and that the economic future lies with China. Our consistent response must be that we are committed to the Asia-Pacific region, that we will stand with our allies and partners to counter Chinese aggression, and that we will continue to promote a shared vision of strong economies, vibrant civil societies, and open democracies. In the end, it is that vision and the human rights that we champion that will ensure American success in the region.

China has not demonstrated a willingness to be a responsible global leader. The U.S. should ensure that international order is followed. Our contention with China is not over who owns the South China Sea, but over who has access to it. To that end, we must enable and assist our partners and allies in the region, especially Indonesia, Thailand, Vietnam, and Singapore, in defending their own sovereignty, the maritime rights, and provide them with economic alternatives to China.

China is using state wealth and productive capacity to target key companies in entire industrial sectors in the United States to gain economic dominance. Even wise tax, regulatory, and trade policies would not be sufficient to overcome this mercantilist strategy. We must invest more in research and development, workforce development and training, and correct lagging private investment in American manufacturing. We must also improve our own defense against the theft of our intellectual property and technology. Only recently have we come to fully understand some of our own vulnerabilities.

Admiral Harris, I'm looking forward to hearing your testimony and how you view our long-term competition with China as Commander of the Pacific Command. I'm interested in hearing about all these issues and much more.

Thank you very much, Mr. Chairman.

Senator INHOFE. Admiral Harris, you are recognized for your opening statement, and then we'll have questions from the Chair.

STATEMENT OF ADMIRAL HARRY B. HARRIS, JR., USN, COMMANDER, UNITED STATES PACIFIC COMMAND

Admiral HARRIS. Thank you, Senator Inhofe and Ranking Member Reed and distinguished members. It's an honor for me to appear again before this committee for what is likely my last posture statement—posture hearing to you all.

I do regret, as the Senator said, that I'm not here with my usual testimony battle buddy, United States Forces Korea Commander, General Vince Brooks, but I think you'll all agree that he's where he's needed most right now, on the Korean Peninsula.

General Brooks and I extend our thoughts and prayers to Chairman McCain and his family as he continues his tough health fight.

There are many things to talk about since my last testimony before you 11 months ago, but I want to start by thanking the Congress for your action last month. I'm grateful for your bipartisan efforts to raise the budget caps for fiscal year 2018 and fiscal year 2019, and I'm optimistic that Congress will resource the fiscal year 2018 NDAA [National Defense Authorization Act] in the coming weeks. I and many others have regularly highlighted the negative impacts that sequestration and the Budget Control Act have leveled against the military, so I would ask Congress to make these bipartisan measures permanent and end sequestration for good.

One of the principal problems that we face in the region is overcoming the perception that the United States is a declining or disinterested power. A fully resourced defense budget leading into long term stability—budget stability will send a strong signal to our allies and partners, and all potential adversaries, that the United States is fully committed to preserving a free and open order in the Indo-Pacific.

As your PACOM [United States Pacific Command] Commander, I have the tremendous honor of leading approximately 375,000 soldiers, sailors, marines, airmen, coast guardsmen, and DOD [Department of Defense] civilians standing watch for the largest and most diverse geographic command. These men and women, as well as their families, fill me with pride in their hard work and devotion to duty. I am humbled to serve alongside them.

The United States has an enduring national interest in the Indo-Pacific, and, as I stated last year, I believe America's security and economic prosperity are indelibly linked to this critical region, which remains at a precarious crossroad, where tangible opportunity meets significant challenge. Here we face a security environment more complex and volatile than any we have experienced in recent memory.

Senator Reed, I join you in being encouraged by recent developments on the Korean Peninsula and the possibility of a summit between President Trump and Kim Jong-un. But, North Korea remains our most urgent security threat in the region. PACOM will continue to fully support the President's maximum pressure campaign and be ready to respond with our allies and partners to the full range of contingency scenarios.

This past year has seen rapid and comprehensive improvement in North Korea's ballistic and missile—ballistic missile and nuclear capabilities, despite broad international condemnation and the imposition of additional United Nations Security Council resolutions.

This includes the detonation of its largest nuclear device, first-ever launches of two different intercontinental ballistic missiles, and six launches of an intermediate-range ballistic missile, all of which Pyongyang emphatically states will target the United States, including Guam.

While some might dispute both the reliability and quantity of the North's strategic weapons, it is indisputable that KJU [Kim Jong-un] is rapidly closing the gap between rhetoric and capability. The Republic of Korea and Japan have been living under the shadow of North Korea's threats for years. Now that shadow looms over the American Homeland.

Meanwhile, China is leveraging military modernization, influence operations, and predatory economics to coerce neighboring countries to reorder the Indo-Pacific to their advantage. While some view China's actions in the East and South China Seas as opportunistic, I do not. I view them as coordinated, methodical, and strategic, using their military and economic power to erode their free and open international order. China's aggression in the South China Sea moves along unabated, despite the Permanent Court of Arbitration's tribunal ruling that invalidated China's Nine-Dash Line claim and unprecedented land reclamation in 2016. China is attempting to assert de facto sovereignty over disputed maritime features by further militarizing its manmade bases, to this very day.

China's impressive military buildup could soon challenge the United States across almost every domain. Key advancements include fielding significant improvements in missile systems, developing fifth-generation fighter capabilities, and growing the size and capability of the Chinese navy, to include their first overseas base in the Port of Djibouti. They're also heavily investing in the next wave of military technologies, including hypersonic missiles, advanced space and cyber capabilities, and artificial intelligence. If the U.S. does not keep pace, PACOM will struggle to compete with the People's Liberation Army on future battlefields.

Thailand's ongoing military buildup, advancement, and modernization are core elements of their strategy to supplant the United States as the security partner of choice for countries in the Indo-Pacific. China also holds global ambitions. But, don't take my word for it, just listen to what China says, itself. At the 19th Party Congress, President Xi stated that he wanted China to develop a world-class military and become the global leader, in terms of composite national strength and international influence. Ladies and gentlemen, China's intent is crystal clear, and we ignore it at our peril.

These types of aspirational goals could be appropriate for a nation of China's stature, but, judging by China's regional behavior, I'm concerned China will now work to undermine the rules-based international order, not just in the Indo-Pacific, but on a global scale, as China expands its presence in Central Asia, the Arctic, Africa, South America, and Europe. This increasingly competitive environment necessitates continued dialogue between the United States and China and our militaries to improve understanding and reduce risk.

For PACOM, my goal remains to convince China that its best future comes from peaceful cooperation and meaningful participation in the current free and open international order and honoring its international commitments. After all, the Chinese economic miracle could not have happened without the rules-based order the region has long supported. But, I've also been loud and clear that we won't allow the shared domains to be closed down unilaterally. So, we'll cooperate where we can, but remain ready to confront where we must.

Now on to Russia. Russian operations and engagements throughout the Indo-Pacific continue to rise, both to advance their own strategic interests and to undermine ours. Russia intends to impose additional costs on the United States whenever and wherever possible by playing the role of spoiler, especially with respect to North Korea. Russia also sees economic opportunities to not only build markets for energy exports, but also to build, or in some cases rebuild, arms sales relationships in the region.

Of particular note are Russian efforts to build presence and influence in the high north. Russia has more bases north of the Arctic Circle than all other countries combined, and is building more with distinctly military capabilities.

In the PACOM region, one event dominated the counterterrorism fight in 2017, the siege by ISIS [Islamic State of Iraq and Syria] of the Philippine city of Marawi and the city's recapture by Philippine security forces. This was symbolic of the largest struggle against violent extremism that we saw in Iraq and Syria and Africa, and now see in South and Southeast Asia. Marawi underscores two important themes with regard to defeating ISIS in the Indo-Pacific. First, localized threats can quickly transform into international causes. An early and effective response is vital to control the fight and own the narrative.

Second, counterterrorism operations are extremely challenging, and most regional forces are poorly equipped for such fights. Our engagement strategy and capacity-building efforts have remained, and will continue to remain, focused on enabling regional counterterrorism forces to win whatever fights they face. Through multinational collaboration, we can eliminate ISIS before it spreads further in the area.

Every day, our allies and partners join us in addressing these global challenges to defend freedom, deter war, and maintain the rules which underwrite a free and open Indo-Pacific. These mutually beneficial alliances and partnerships provide a durable asymmetric strategic advantage that no competitor or rival can match.

In the Indo-Pacific, our alliance with Australia continues to anchor peace and stability in the region with increased collaboration in counterterrorism, space, cyber, integrated air and missile defense, and regional capacity-building. Our alliance with South Korea is ironclad, and our alliance with Japan has never been stronger. The attack on Marawi City served as a reminder of the value of our alliance to Philippine security and stability, and we reinvigorated our alliance with Thailand through continued engagement with military leadership to promote regional security and healthy civil/military relations. We've also advanced our partnerships with India, Indonesia, Malaysia, Singapore, Sri Lanka, Viet-

nam, and many others who are dedicated to the principles of long-standing customary international law.

While United States interests in the Indo-Pacific are real and enduring, the growing challenges to our interests are equally real and cannot be overstated. In order to deter conflict initiated by revisionist powers, rogue states, and transnational threats, we must continue to develop, acquire, and field advanced capabilities. Our evolving force posture must decrease our vulnerabilities, increase our resilience, and reassure our allies and partners. America's resolve is strong, and it's imperative that we continue to show our commitment to the region in the years to come.

I ask this committee to continue its support for these future capabilities that maintain our edge and prevent would-be challengers from gaining the upper hand. Based on your bipartisan efforts last month, I'm excited about the path ahead. Thank you for your enduring support to the PACOM team and our families who live and work in the Indo-Pacific, a region critical to America's future. I look forward to your questions.

[The prepared statement of Admiral Harris follows:]

PREPARED STATEMENT BY ADMIRAL HARRY B. HARRIS JR.

Chairman McCain, Ranking Member Reed, and distinguished members of the committee, thank you for the opportunity to appear before you today. This is my third opportunity to present my posture assessment since taking command of U.S. Pacific Command (USPACOM) in May 2015. During my time at USPACOM, I have had the tremendous honor of leading the soldiers, sailors, marines, airmen, coast guardsmen, and Department of Defense civilians standing watch for the largest and most diverse geographic command. These men and women, as well as their families, fill me with pride with their hard work and devotion to duty. I'm humbled to serve alongside them.

Since its inception in 1947, USPACOM and the joint military forces assigned to it have served as a shield protecting the U.S., its territories, its people, and its interests throughout the Indo-Pacific region. To accomplish this, USPACOM works hand-in-hand with the other U.S. Government agencies in this region to defend our Homeland and our citizens. This is USPACOM's enduring responsibility and my #1 command priority. To enhance our efforts, USPACOM works with our allies and partners to improve stability in the region by promoting security cooperation, deterring aggression, responding to contingencies, and, when necessary, fighting to win. The path to security is based on our commitments to mutual interest and partnership, continuous military presence, and global readiness.

The United States has a lasting national interest in the Indo-Pacific. As I stated last year, I believe America's security and economic prosperity are indelibly linked to this critical region, which remains at a precarious crossroad where tangible opportunity meets significant challenge. Of the five principal challenges that drive United States defense planning and budgeting—China, Russia, Democratic People's Republic of Korea (DPRK), Iran, and violent extremist organizations—four are found within the Indo-Pacific. To protect the Homeland, the American people, and the American way of life, we must target threats at their source and confront them before they ever reach our borders or cause harm to our people. America cannot ignore these challenges and should not allow any nation or treacherous non-state actor to erode the rules-based security order that has yielded tremendous benefits for our nation and this region for the last seven decades.

Following the upheaval of World War II, the rules-based international order—or what the 2018 National Defense Strategy described as a *free and open international order*—flourished to keep the Indo-Pacific largely peaceful, creating the stability necessary for economic prosperity in the U.S. and countries throughout the region. Ironically, the country that has benefitted the most from regional stability is China. The collective respect for, and adherence to, international law and standards have produced the longest era of peace and prosperity in modern times. This was not happenstance. This was made possible by seven decades of robust and persistent United States military presence and credible combat power. America's security treaties with Australia, Japan, the Republic of Korea (ROK), the Philippines, and Thailand have

buttressed this security order, which is consequently strengthened even further by growing partnerships with India, Indonesia, Malaysia, Mongolia, New Zealand, Singapore, Sri Lanka, and Vietnam. USPACOM recognizes the global significance of the Indo-Pacific region and that strong and independent states are the best hope for a peaceful world. Challenges are best met together; therefore, America will remain an engaged and trusted ally and partner committed to preserving the security, stability, and freedom necessary for enduring prosperity.

A free and open order encompasses a number of critical principles: the rule of law; adherence to international law and other international standards; peaceful resolution of disputes; freedom of navigation for all civilian and military vessels and aircraft; and open access to the sea, air, space, and cyberspace domains. The outcomes of these principles are enhanced security and open, legitimate trade. Sustainable security requires effective and enduring institutions, both civilian and military, that are guided by these principles. Defense, diplomatic, and development efforts are intertwined and continue to reinforce each other to promote stability to build and sustain stable democratic states.

The Indian and Pacific Oceans are the economic lifeblood that links the Indian Subcontinent, Australia, Southeast Asia, Northeast Asia, and Oceania with the United States Oceans that were once physical and psychological barriers keeping nations apart are now maritime superhighways that bring them together. Over half the global GDP comes from the region (including the United States) and roughly one-third of global shipping passes through the South China Sea. A quarter of United States exports go to the region, and exports to China and India have more than doubled over the past decade. This diverse region drives global growth and is home to the world's largest economies (United States, China, and Japan) and six of the world's fastest growing economies (Cambodia, India, Laos, Burma, Nepal, and the Philippines). Unimpeded lawful commerce, fair market economies, and free trade promote American prosperity and security, leading to a strong economy that protects the American people, supports our way of life, and sustains American power.

The Indo-Pacific has the world's most populous democracy (India) and the world's largest Muslim-majority state (Indonesia), both of which we see as key United States partners in the region. The area is home to more than half the world's population. Eleven of the 15 largest militaries in the world are in or adjacent to the region, as are a majority of the countries that possess nuclear weapons. These regional characteristics merely reinforce the need for a strong and persistent United States presence in the region to preserve peace through strength. To be blunt, the stability of the Indo-Pacific matters to America. The region needs a strong America, just as America needs a vibrant, thriving Indo-Pacific that remains both politically and economically free.

It is not just history that necessitates our continued presence in the Indo-Pacific region; it is the future as well. The U.S. must maintain credible combat power across the region in order to defend against revisionist powers that seek to subvert democracy and undermine a free and open international order. It is to our long-term benefit to remain the region's security partner of choice by working closely with our allies and partners who share our commitment to uphold peace, economic prosperity, and security. We must not cede ground in this endeavor.

What follows is USPACOM's strategic approach to the region, as directed by the National Defense Strategy, including my assessment of the regional security challenges, the key strategic opportunities, and the capabilities necessary to preserve a free and open Indo-Pacific. I will emphasize critical needs in order to seek your support for budgetary and legislative action to improve our position and military readiness in the theater. I will detail the value of U.S. strategic force posture and forward presence, and describe how these preconditions improve the readiness of our joint force to fight tonight, while simultaneously enhancing our ability to reassure allies and partners. Finally, I will discuss how USPACOM can advance U.S. foreign policy by strengthening our existing alliances and cultivating important partnerships, thereby yielding strategic benefits that improve USPACOM's readiness to protect and defend U.S. interests.

OVERVIEW

Regional security and stability are threatened by a range of rogue and revisionist state and non-state actors who are challenging U.S. influence and the free and open international order that has helped underwrite peace and prosperity for America and throughout the region for over 70 years. The Democratic People's Republic of Korea (DPRK) has rapidly advanced and improved its ballistic missile capability and its nuclear weapons program. Sanctions, international condemnation, and even

increased pressure from China, to date, have not yet compelled the DPRK to end their unlawful nuclear and ballistic missile programs. While tensions in the East China Sea between China and Japan have stabilized, China's provocative and destabilizing actions in the South China Sea continue unabated. China's historically unprecedented economic development has enabled an impressive military buildup that could soon challenge the United States across almost all domains. Key Chinese advancements include: significant improvements in missile systems; 5th generation fighter aircraft capabilities; and increased size and capability of the Chinese navy. A major initiative for that growing navy is China's first-ever overseas base in Djibouti. I am also deeply concerned about China's heavy investments into the next wave of military technologies, including hypersonic missiles, advanced space and cyber capabilities, and artificial intelligence—if the U.S. does not keep pace, USPACOM will struggle to compete with the People's Liberation Army (PLA) on future battlefields. China's ongoing military modernization is a core element of China's stated strategy to supplant the United States as the security partner of choice for countries in the Indo-Pacific. Russia's interest and influence in the region continues to increase through national outreach and military modernization—in both its conventional forces and nuclear strike capabilities. The threat of ISIS in the Indo-Pacific changed drastically from inspiration and support to direct action as ISIS–Philippines seized control of the city of Marawi in May. The Armed Forces of the Philippines recaptured the city after a long fight and scattered what was left of ISIS–Philippines, but the incident highlights the dangerous and difficult problem transnational terrorism presents to the region. Drug trafficking, human smuggling, piracy, weapons proliferation, natural disasters—as well as illegal, unreported, and unregulated fishing—further challenge regional peace and prosperity.

The U.S. military remains the most powerful in the world, but our relative advantage and ability to counter these threats have declined. For USPACOM to continue to underpin U.S. diplomatic efforts and deter future conflict against peer competitors, rogue states, and transnational threats, the joint force must maintain a clear ability to fight and win when called upon to do so.

STRATEGIC APPROACH

The 2018 National Defense Strategy aims to Compete, Deter, and Win alongside our allies and partners. In support of these aims, USPACOM maintains a strategic approach to the region that encompasses four core elements:

1) Maintain credible combat power and work with the Services and Departments to build the right force of the future;
2) Maintain a network of like-minded allies and partners to cultivate principled security networks which reinforce the free and open international order;
3) Continue to fly, sail, and operate wherever international law allows and encourage others to do the same. Be ready to counter the coercive influence of regional competitors;
4) Counter transnational threat and challenges, including terrorism and illegal/illicit trafficking, and be ready to respond to natural disasters.

USPACOM recognizes the global significance of the Indo-Pacific and understands that challenges are best through a unified approach. Thus, USPACOM actions are guided by two unifying concepts: 1) communicate effectively and truthfully; and 2) synchronize efforts outside of USPACOM across the DOD, the interagency environment, and internationally with like-minded allies and partners. Together, fully aligned with our interagency, joint, and combined partners, USPACOM will remain prepared to meet the following key challenges.

KEY CHALLENGES

Democratic People's Republic of Korea (DPRK): Last year I testified that the DPRK was our most immediate threat, and since then the level of that threat has increased significantly. The past year has seen rapid and comprehensive improvement in the DPRK's ballistic missile and nuclear capabilities, despite broad international condemnation and the imposition of additional United Nations Security Council sanctions. This includes the first-ever launches of two different intercontinental-range ballistic missiles (ICBM) during three separate ICBM tests and six launches of an intermediate-range ballistic missile (IRBM). Pyongyang emphatically states its ICBMs are only designed to target the United States and its IRBMs are only designed to strike Guam. Two missile tests overflew sovereign Japanese territory, needlessly endangering Japanese citizens. Several commercial aircraft on standard flight routes also reported being close enough to see missiles in the air during tests, underscoring the DPRK's reckless research and development programs.

The DPRK still holds the distinction of being the only nation to have tested nuclear weapons in the 21st Century, and the DPRK detonated its sixth and largest nuclear device at its underground facility at Punggye-ri in September 2017. Senior DPRK officials then threatened to conduct an air burst of a nuclear warhead mated to one of its long-range ballistic missiles. Although this has not happened, Pyongyang could potentially do so to further demonstrate capability or to prove that its design and technical functions work. The international community has cautioned against doing so, and is certain to condemn such an act if it occurs, but Kim Jong-un has demonstrated over and over again his disdain for international norms, responsibilities, and prudent conduct.

The combination of successful, or mostly successful, ballistic missile tests and the most recent nuclear test have advanced the DPRK's capabilities significantly. Following the 29 November 2017 Hwasong-15 ICBM test, Kim Jong-un declared with pride that they now have "finally realized the great historic cause of completing the state nuclear force." While some in the U.S. might dispute both the reliability and quantity of the North's strategic weapons, it is indisputable that Kim is rapidly closing the gap between rhetoric and capability. Our two close allies in Northeast Asia—the Republic of Korea and Japan—have been living under the shadow of the DPRK's threats; now the shadow looms over the American Homeland. USPACOM and the entire DOD fully support the President's maximum pressure campaign, led by the State Department. Nobody seeks or desires conflict with the DPRK, but the United States and its allies must prepare for the full range of military contingencies.

Beyond the unanimous adoption of United Nations Security Council Resolutions (UNSCR) 2321, 2356, 2371, 2375, and 2397 in 2017, countries around the world are diplomatically and financially isolating the DPRK. In response to the efforts of Secretary Tillerson and other senior administration officials, the international community has drastically reduced trade with the DPRK, frozen assets, expelled overseas DPRK workers, and more. China's actions are critical as China is the DPRK's largest trading partner (approximately 92 percent of all trade). To Beijing's credit, China has taken significant steps to enforce the various UNSCRs, but Beijing can and should do more. I am also concerned about Russia's limited contributions to the pressure campaign. While Moscow voted in favor of the recent Security Council resolutions, Russia has the capability to undermine the efforts of other countries, thereby playing the role of a spoiler as the DPRK approaches a full ICBM capability. Overall, the pressure campaign does appear to be affecting Pyongyang's calculus, but Kim Jong-un continues to channel his reduced resources to weapons programs and high profile "morale" projects that benefit only the elites, leaving the DPRK's citizens to suffer.

The DPRK's grossly oversized conventional forces provide the regime additional coercive options. Pyongyang's active military force of almost 1.2 million is the fourth largest in the world, though the DPRK's population (approximately 24.5 million) ranks as only the 52nd largest worldwide. By contrast, the 53rd most populous country, Australia, fields an active force of under 60,000. The DPRK People's Army boasts a substantial inventory of long-range rockets, artillery, and close-range ballistic missiles aimed across the Demilitarized Zone at the Republic of Korea and United States forces stationed there. Many of these systems are capable of delivering chemical and biological weapons. The DPRK's well-trained, highly disciplined special operations forces are another asymmetric option for Kim Jong-un. Additionally, the DPRK is arming its navy with longer-range anti-ship missiles and is continuing to work on a submarine-launched ballistic missile capability.

I said last year that it was critical that the United States maintain a strong sense of resolve in order to bring Kim Jong-un to his senses, not his knees. That is even more true today.

China: The People's Liberation Army's (PLA) rapid evolution into a modern, high-tech fighting force continues to be both impressive and concerning. PLA capabilities are progressing faster than any other nation in the world, benefitting from robust resourcing and prioritization. During the 19th Party Congress in October 2017, Chinese Communist Party General Secretary Xi Jinping promised military development would remain a national priority, pledging to complete modernization by 2035 and to achieve "world class" status by 2049. On the current trajectory, USPACOM assesses the PLA will likely attain these goals well ahead of the projected completion dates.

In the past year, PLA forces have become more expeditionary and more integrated. The reorganization that created geographically-focused Theater Commands is now 2 years old and the PLA is exhibiting a rapid maturation of processes and structures. As tensions on the Korean Peninsula increased, Chinese and regional press began highlighting exercises and preparations underway in the Northern The-

ater—the command responsible for Korean contingencies. Similarly, there was a variety of activities in the Western Command this past summer and fall during the standoff between Chinese and Indian forces at Doka La. While we assess the PLA will still face a number of challenges moving forward, the PLA has clearly embraced the need for increased joint interoperability.

Perhaps nowhere is the PLA making more dramatic progress than in ballistic missiles. While the PLA is rapidly expanding the number, type, and sophistication of all of its missiles, China has made the most progress in intermediate-range ballistic missile (IRBM) technology, with IRBMs now constituting approximately 95 percent of the PLA's overall missile force. Chinese media routinely trumpets missile developments, carefully noting their missiles do not target any specific country. However, a simple comparison of missile ranges with geography suggests where Chinese missiles would most likely be targeted—SRBMs against Taiwan and United States carrier strike groups operating at sea, IRBMs against United States bases in Japan and Guam, and ICBMs against the continental United States. China's pursuit of advanced hypersonic missile technologies portends even greater challenges over the next few years.

The PLA Navy (PLAN) is in the midst of a massive shipbuilding program. If this program continues, China will surpass Russia as the world's second largest Navy by 2020, when measured in terms of submarines and frigate-class ships or larger. The first Type 055 (Renhai) guided missile cruiser was launched in June 2017—the lead unit in a class of advanced multi-warfare ships that we expect will enter operational service next year. At least four more of these ships are under construction. Six Type 052 (Luyang III) Guided Missile Destroyers are operational, with another seven being built or fitted out. Amphibious capabilities are also growing. Four of an expected six Type 071 (Yuzhou) Amphibious Transport Docks have joined the fleet in the past decade, and the first Type 075 Landing Helicopter Dock is under construction. In October 2017 China launched the lead ship in the Type 901 Fast Combat Support Ship class, the first logistics ship specifically designed to support China's aircraft carrier(s); the second PLAN carrier is in the water at Dalian and progressing toward sea trials. New submarines under construction include five more Type 039A (Yuan) and four more Type 093 (Shang) Nuclear Attack Submarines. All of these ships boast improved communications suites and defensive systems, as well as more lethal and longer-range weapons.

The advances shown in the PLA Air Force (PLAAF) and Naval Air Force (PLANAF) are less focused on new aircraft—though there are several noteworthy developments. Air and air-defense progress has been most evident in the increasing sophistication of operational training. When Chinese bombers began flying simulated strike profiles in the Philippine Sea, Sea of Japan, and South China Sea a few years ago, the exercises were very basic events. Now we see fighter escorts and supporting packages of other specialized aircraft, including aerial refuelers. Major training events are increasingly incorporating professional opposing forces, evaluators, and instrumentation to better challenge and assess capabilities. The J20 multi-role fighter program is progressing from development and prototypes into operational use. The J31 program appears to be advancing less quickly, but the two programs suggest a near-term capability for China to field 5th generation fighters within the next few years. At least two new heavy-lift transports (Y–20) are the leading edge of a fleet that will help the PLA overcome a long-standing inability to move troops and equipment anywhere in China or across the world. New and/or upgraded bombers, electronic warfare, command and control, and anti-submarine aircraft all expand PLA abilities to conduct a wide range of operations.

PLA ground forces are still in the midst of a force-wide reorganization as the PLA Army (PLAA) moves from divisions to combined arms brigades as its basic combat formation. These more flexible, integrated formations will give the PLAA the ability to respond more precisely to a wider variety of contingencies. Forces are training in unfamiliar locations, under challenging environmental conditions, and with increased realism in an attempt to gain proficiency across a range of circumstances. The expansion of the PLAN–Marines continues as well, as the force has grown from two brigades to possibly eight, with two brigades each allocated to most of the Theater Commands. A contingent of PLAN–Marines continues to garrison the PLA's first overseas base in Djibouti, having arrived late last summer.

Following its establishment at the close of 2015, the PLA Strategic Support Force (PLASSF) has quickly matured to better manage and employ the PLA's impressive array of cyber, space, and other specialized capabilities. The PLASSF consolidates and employs specialized capabilities that could degrade or deny other countries the use of space, the electromagnetic spectrum, communications systems, and data networks. This joint organization reflects the PLA's emphasis on winning "system versus system" conflicts.

To operationalize these new and expanded capabilities, Chinese forces—especially the PLAN—are operating in more locations, more often, leading to greater degrees of proficiency. The PLAN's counter-piracy deployment to the Gulf of Aden is now in its ninth year, and has provided invaluable experience to many of the PLAN's surface ships and crews. Chinese submarines have deployed to the Indian Ocean seven times in the past 4 years, and Chinese ships have conducted dozens of port visits across Europe, Africa, the Middle East, and Asia. This does not mean the PLAN has become a global navy, but its presence and influence are expanding. Much of this activity is linked to China's ambitious Belt and Road Initiative, which is meant to increase China's global influence through a China-centered trading network. The majority of this activity was expected, and is consistent with the actions of a rising power, but some activities and China's lack of openness about its plans are reasons for concern. When the base in Djibouti opened last year, the base was touted as a logistics outpost; yet within the base's first few months of operation, PLAN–Marines held several live fire drills involving armored combat vehicles and artillery. This suggests the base also functions as a forward deployed location for expeditionary capabilities, rather than as simply a logistics hub.

Recent efforts to introduce clarifying legislation—in the form of the Foreign Investment Risk Review Modernization Act (FIRRMA, aka "CFIUS 2.0")—seek to improve the national security focus of the Committee on Foreign Investment in the United States (CFIUS) and will help focus the lens on activities conducted by the Chinese. The economic stimulus of Chinese investment in the United States and across the Indo-Pacific region, including real estate transactions in the vicinity of military installations, threatens to undermine our national security objectives and those of our allies and partners. I am fully supportive of these efforts, and believe we must view Chinese investment holistically to best understand Beijing's overall intent.

Territorial Disputes and Maritime Claims: Overlapping and competing territorial and maritime claims remain a source of friction in the region. I am most concerned about China's ongoing actions in the South China Sea. In 2017, China took significant steps to further militarize its bases on disputed features.

South China Sea: The United States takes no position on competing sovereignty claims to naturally formed islands in the South China Sea, but we do strongly call on all countries to ensure their claims and activities are consistent with international law. Specific to maritime claims and activities, countries should adhere to the law of the sea as reflected in the United Nations Convention on the Law of the Sea.

The most significant territorial disputes in the South China Sea include: 1) the Paracel Islands, between China, Taiwan, and Vietnam; 2) Scarborough Reef, between China, Taiwan, and the Philippines; and 3) the Spratly Islands, where China, Taiwan, Vietnam, Brunei, Malaysia, and the Philippines each claim sovereignty over some or all of the land features. It is the last one that has drawn much of the attention in recent years. On September 25, 2015, Chinese Communist Party General Secretary Xi Jinping stated in a Rose Garden ceremony that China did not intend to militarize its outposts on the Spratly Islands. The plain fact is that China has built a number of clear military facilities and capabilities on all of their seven outposts, and China continues to build more.

It is important to note that there are no military aircraft, air defense missile launchers, or anti-ship missile systems currently deployed to any of China's Spratly Island outposts. The only weapons present now are short-range defensive systems appropriate for close defense of the outposts. However, China has built a massive infrastructure specifically—and solely—to support advanced military capabilities that can deploy to the bases on short notice. The United States should assume Beijing plans to use these facilities for their clearly intended purposes at some point in the future. The Chinese also built the same sets of structures on each of its three largest outposts in the Spratly Islands (at Fiery Cross Reef, Mischief Reef, and Subi Reef), including:

- 10,000 foot runways capable of launching and recovering all military aircraft
- Fighter aircraft hangars
- Large aircraft hangars, capable of supporting larger aircraft such as bombers, AWACS, and transports
- Protected air defense launcher sheds
- Protected anti-ship missile launcher sheds
- Water and fuel storage tanks farms
- Ammunition storage facilities
- Barracks, communications systems, deep water pier facilities, military radars

These bases appear to be forward military outposts, built for the military, garrisoned by military forces, and designed to project Chinese military power and capa-

bility across the breadth of China's disputed South China Sea claims. China's explanation that Beijing was "forced" to deploy these capabilities in "response" to an "increased" United States presence—especially Freedom of Navigation Operations (FONOPS)—is disingenuous. The United States Navy has been navigating and operating in the South China Sea, and has been peacefully exercising freedom of navigation operations all over the world, for decades. On the other hand, China only recently began island reclamation earlier this decade. The overall design and execution of the projects strongly suggests a master plan was in place from the start. In July 2016, an Arbitral Tribunal under the Law of the Sea Convention issued its ruling in favor of the Philippines' South China Sea claims. Even though the Arbitral Tribunal is binding on both China and the Philippines, China has yet to abide by the ruling. The Philippines, preoccupied with the counter-terrorism fight on Mindanao and desirous of stable relations with China, has not pressed the issue since China is "allowing" Filipino fishermen some access to Scarborough.

Across the South China Sea, China's air force, navy, coast guard, and maritime militia all maintain a robust presence. Routine patrols and exercises ensure Chinese forces are in and around all the features, not just the ones they occupy. China routinely challenges the presence of non-Chinese forces, including other claimant nations and especially the United States, often overstating its authority and insisting foreign forces either stay away or obtain Chinese permission to operate.

Since 1979, the U.S. Freedom of Navigation program has peacefully challenged excessive maritime claims by coastal states all around the world, including those of our friends and allies. This program consists of diplomatic communications and operational assertions, which are not provocative and are not a threat to any country. These operations are conducted globally to maintain open seas and skies, which underpins economic prosperity for the U.S. and all countries.

East China Sea: Tensions between Japan and China over the Senkaku Islands have largely stabilized since last year, but there is no long-term resolution in sight. With substantive military and coast guard assets in the area from both countries, the situation could easily lead to miscommunication, miscalculation, and escalation. China persistently challenges Japan's administration over the islands by sailing Coast Guard ships near the Senkaku Islands and protesting Japanese reconnaissance flights. Chinese exercises prominently feature military actions focused on the Senkaku Islands, including exercises training for a possible future physical occupation of the islands and establishment of a maritime blockade to isolate the disputed areas. Clearly describing Beijing's intent to the United States and Japan, Chinese media prominently features stories that highlight those specific capabilities and actions. America's policy is clear and has not wavered: the Senkaku Islands are under the administration of Japan and, as such, are covered by article 5 of the United States-Japan Treaty of Mutual Cooperation and Security. The United States opposes any unilateral action that seeks to undermine Japan's administration of these islands.

Russia: Russian operations and engagement throughout the Indo-Pacific continue to rise, both to advance their own strategic interests and to undermine United States interests. Russia intends to impose additional costs on the United States whenever and wherever possible by playing the role of a spoiler, especially with respect to the DPRK. Additionally, Moscow seeks to alleviate some of the effects of sanctions imposed following their aggression in Ukraine by diplomatically wooing select states in Asia. Russia also sees economic opportunities to not only build markets for energy exports, but also to build—or in some cases rebuild—arms sales relationships in the region.

Russia's strategic nuclear forces are modernizing and routinely practice nuclear strikes against the United States Homeland. The Russian Pacific Fleet's two Borey (*Dolgorukiy*-class) nuclear ballistic missile submarines (SSBN) have been integrated into operations since their arrival in 2015 and 2016, augmenting older Delta III SSBNs and substantially bolstering Russia's modern nuclear strike capabilities. Tu-95 Bear bombers fly off the coasts of Canada, Alaska, and occasionally the northwest part of the continental United States in profiles designed to train their crews and assess United States and Canadian responses. Additionally Russia uses its long-range aviation forces for strategic messaging on other issues, for example, flying around Japan or off the Korean Peninsula. Most recently, a pair of Tu-95s deployed to eastern Indonesia, passing by Guam during their transits each way. Land-based nuclear missile forces similarly exercise and test-fire missiles oriented toward North America.

Russian naval modernization is making their Pacific Fleet more capable and more lethal. The fleet is expected to receive as many as 10 new ships in 2018, including several combatants. The first *Steregushchy*-class guided missile corvette was commissioned in January 2017 with two more expected to arrive this year. This ship

class is equipped with the advanced Kalibre missile system, a multi-functional weapons array that can fire a variety of long-range anti-ship and land attack missiles. The first of six modernized Project 636.3 (Kilo) nuclear attack submarines is scheduled to arrive in late 2018 (though it could slip into 2019), with all six in the fleet by 2021. The Russian Pacific Fleet's five Project 949A (Oscar II) nuclear-powered guided missile submarines are being upgraded to incorporate the Kalibre system as well. This will make these submarines, whose wartime missions include attacking aircraft carriers and other priority land and sea targets, much more lethal.

Ground and air modernization efforts continue as well, including state-of-the-art Bastion coastal defense cruise missiles, S–400 strategic air defense missiles, and new/upgraded helicopters and fighters. In 2017, Russian troops and warships held several combined training events with China and hosted India for their first tri-service bilateral exercise.

Of particular note are Russian efforts to build presence and influence in the high north. Russia has more bases north of the Arctic Circle than all other countries combined, and is building more with distinctly military capabilities.

ISIS/Violent Extremist Organizations (VEOs): One event dominated the counter-terrorism fight in the USPACOM AOR in 2017: the siege by ISIS in the Philippines (ISIS–P) and recapture by government forces of the Philippine city of Marawi. The crisis began in May 2017, following a failed operation by the Armed Forces of the Philippines (AFP) to capture the leader of an ISIS-pledged group. A range of extremist actors, motivated by ideology, financial reward, clan ties, adventure, or other reasons descended upon Marawi, where they found a historically marginalized, predominantly Muslim population. ISIS–P became a focus for global ISIS media publications and statements, many of which encouraged additional supporters to flock to Marawi. A few tried, not many made it. USPACOM—with Special Operations Command, Pacific (SOCPAC) in the lead—provided counter-terrorism support and assistance to the AFP, enabling the Philippine Security Forces to disrupt ISIS–P activities in the southern Philippines. After a protracted fight, the AFP recaptured the city and killed or drove out what was left of ISIS–P. According to the AFP, 962 ISIS–P, 165 AFP, and 47 civilians were killed during the siege and recapture.

Marawi underscores several important themes with regard to defeating ISIS in the Indo-Pacific. First, localized threats can quickly transform into international causes. Prior to Marawi, few, if any, ISIS leaders or media coordinators had ever heard of the location or key actors involved. Within weeks, Marawi was the cover story on ISIS' flagship media product. An early and effective response is vital to control the fight and own the narrative. Second, despite such media attention and calls for support, few extremists from within the region responded, and even fewer came from outside the AOR. This underscores our assessments that most issues in the Indo-Pacific are "local" and the desire and ability to join someone else's fight are limited. Third, counter-terrorism operations are extremely challenging, and most regional forces are poorly equipped for such fights. Our engagement strategy and capacity-building efforts have remained—and will continue to remain—focused on enabling regional counter-terrorism (CT) forces to win whatever fights they face.

USPACOM remains concerned about the potential for ISIS ideology to inspire terrorism in the Indo-Pacific, but cautiously notes that the number of successful attacks dropped significantly during the past year. The decline could be the result of an increased CT focus by governments across the region, as well as more effective efforts by host nation intelligence and security services—Indonesia, Malaysia and Bangladesh are among the places where authorities have successfully disrupted plots. The decline might also be due to the diminished stature of ISIS and its ideology following losses in Iraq and Syria. However, the region is still fertile for radicals and extremists looking to affiliate with the ISIS brand.

Multinational partnerships represent the best method of countering VEOs across the region. USPACOM is engaging Malaysia, Indonesia, the Philippines, Australia, and New Zealand to degrade and defeat ISIS and other VEO threats. Many Indo-Pacific countries such as Australia, New Zealand, and Singapore have joined the coalition dedicated to ISIS' complete destruction. Through multinational collaboration, like-minded nations can eliminate ISIS before it spreads further in the USPACOM area of responsibility.

Countering violent extremism in the Indo-Pacific requires close collaboration with U.S. Government interagency partners, such as the Department of State, the Department of Treasury, the Federal Bureau of Investigation (FBI), USAID, and the other agencies from the U.S. intelligence community. Through an interagency network reinforced by liaison officers embedded in USPACOM headquarters and Special Operations Command (SOCOM), we are able to leverage tools from across our Government to fight terrorism and counter violent extremism.

Transnational Crime:

From finished opioids to industrial chemicals that support production of other illegal drugs, the Indo-Pacific is a key player the global supply chain for the illegal drug market. Transnational criminal organizations, operating across borders and across the globe, are responsible for the vast majority of the illicit activities that spill drugs and related violence into American communities. Characteristics of these threat organizations continue to evolve. They use technology as an enabler to further disperse and decentralize their organizations, thereby making effective targeting of these threats more challenging. The opportunistic nature of drug trafficking organizations enables them to stay ahead of law enforcement.

At the same time countries in the Indo-Pacific are wrestling with growing internal drug consumption challenges. In the Philippines, the scourge of drug use has had multiple destabilizing effects, at the family-level, community-level, and the national level, as President Duterte's efforts to address the problems have created relationship challenges with the United States and others. Amphetamine Type Stimulant (ATS) use continues to grow throughout East and Southeast Asia, while heroin demand remains steady. Consistently high prices for cocaine in Australia and New Zealand support a small but extremely lucrative trade for Western Hemisphere drug traffickers.

Across the Pacific Island Nations, expanding ATS usage, concurrent with expanding crime and corruption, aptly demonstrates the symbiotic relationship between drugs and these corrosive effects. United States territories such as Guam and the Commonwealth of the Northern Marianas Islands (CNMI) face these same challenges.

Many of the drug trafficking challenges on America's southwest border start with the precursor chemicals that are sold through licit commerce, predominantly from China, and to a lesser extent, India. Criminal entities with ties to Mexican and South American drug cartels use these licit chemicals to produce methamphetamine, cocaine, and heroin.

Another drug, fentanyl-laced heroin, has been responsible for a spike in United States overdose deaths. Fentanyl, and its numerous analogs, originate almost exclusively from China. To combat these threats, the United States Government works closely with the government of the People's Republic of China in a Joint Liaison Group (JLG) on Law Enforcement Cooperation led by the Department of Justice.

Cyber: The importance of cyberspace is growing rapidly as the world becomes increasingly interconnected and networked. National power and security depend on the ability to operate securely in and through cyberspace. The two most capable cyber actors worldwide are Russia and China. Both of these countries have incorporated cyber into their joint warfighting doctrine and routinely exercise these capabilities alongside more traditional elements as a force multiplier. In fact, China values cyber so highly it created the Strategic Support Force to integrate and synchronize cyber operations. Meanwhile, a provocative DPRK continues to employ cyber operations against its adversaries. Last May, the DPRK deployed the WannaCry ransomware attack, affecting over 300,000 computers in 150 countries. As regional interaction becomes increasingly dependent on cyber activity, these threats to cyberspace will become more concerning.

Proliferation: The Indo-Pacific has the busiest air and maritime ports in the world. Technological advances have outpaced many countries' ability to effectively manage export controls to counter the proliferation of component technology. Trade includes dual-use technology, such as commercial items controlled by the nuclear, ballistic missile, and chemical/biological weapons control regimes, including manufactured or re-exported materials from other countries with limited export control enforcement. USPACOM's Countering Weapons of Mass Destruction (C–WMD) community supports Special Operations Command (SOCOM) global counter-proliferation strategy by addressing regional concerns through key leader engagements, combined and joint exercises, and international security exchanges focused on counter-proliferation activities. Since 2014, an enduring Proliferation Security Initiative (PSI) Asia-Pacific Exercise Rotation (APER) is held annually between PSI Operational Experts Group (OEG) states in the USPACOM AOR. The United States, New Zealand, Singapore, Australia, Japan, and Republic of Korea rotate hosting the PSI exercises. This year, Japan is hosting the PSI APER followed by the Republic of Korea next year.

Natural Disasters: The Indo-Pacific region continues to remain the most disaster-prone region in the world. About 75 percent of the Earth's volcanoes and 90 percent of earthquakes occur in the "Ring of Fire" surrounding the Pacific Basin. According to a 2015 UN report, disasters over the last ten years took the lives of a half a million people in the region, with over 1.5 billon people affected, and damages greater than 500 billion dollars.

While disaster response is not a primary focus for USPACOM, a key element of USPACOM's Theater Campaign Plan (TCP) is building capacity with allies and partners to improve their resiliency and capability to conduct humanitarian assistance/disaster response (HA/DR). HA/DR cooperation is also an effective means to deepen and strengthen relationships. USPACOM's Center for Excellence in Disaster Management (CFE–DM) serves as a regional authority on best practices for HA/DR and helps prepare regional governments for HA/DR events. Our service components are prepositioning HA/DR stocks to facilitate timely response and to build access in the region. When possible, U.S. military forces assist with their unique capabilities in the areas of air and sealift, infrastructure restoration, and emergency medical support. As just two examples, in 2016, USS *Sampson* (DDG 102) and Maritime Patrol and Reconnaissance Aircraft assisted New Zealand in its response to an earthquake on its South Island; and in 2017, USS *Lake Erie* (CG 70) supported Sri Lanka during flooding from a tropical cyclone and the rainy season.

Workforce Challenges for Military Realignments in the Pacific: I appreciate Congress' efforts in the fiscal year 2018 NDAA to provide much-needed relief for DOD on the problem of construction worker shortages in Guam and Commonwealth of Northern Marianas Islands (CNMI). By extending the authority to grant H2B visas from 2018 to 2023 for military construction (MILCON) projects, Congress will help alleviate labor shortages in these areas that would otherwise drive cost increases and delays in key MILCON projects that support the realignment of U.S. forces in the region. However, the same labor shortages that threaten MILCON also threaten much needed civilian construction for these communities. Unless directly supporting a MILCON project, civilian construction efforts will not receive the same relief from H2B Visas. In addition to slowing the economic growth of Guam and CNMI, the insufficient number of workers is causing friction between the military and civilian communities. The local communities perceive that the U.S. has favored military construction at the expense of civilian construction.

Budget Uncertainty: Fiscal uncertainty breeds a significant risk to USPACOM's strategic priorities. The Budget Control Act and yearly continuing resolutions (CR) interrupt USPACOM's ability to work with the Services, Unified Commands, and Sub-Unified Commands to effectively plan for the long-term mission. According to the Government Accountability Office's (GAO) September 2017 report, "Budget Uncertainty and Disruptions Affect Timing of Agency Spending," we have had approximately 101 CR extensions between 1999 and 2017. This year added five more CR extensions. Under these conditions of perpetual uncertainty, we cannot efficiently and effectively plan and prepare our forces to meet today's challenges. This is no truer than in the Indo-Pacific.

Five years ago, sequestration cut almost every defense program equally. As a result, readiness and operational capability have suffered. While the recent tragedies in the Western Pacific involving surface combatants assigned to USPACOM were the direct result of gross negligence by the ships' crews, multiple reports cited additional contributing factors. Both the Secretary of the Navy's Strategic Readiness Review and U.S. Fleet Forces Command's Comprehensive Review identified the "imbalance" in surface combatant capacity and operational requirements. In fact, the Comprehensive Review noted that, "Under the Budget Control Act (BCA) of 2011 and extended Continuing Resolutions, the ability to supply forces to the full demand is—and will remain—limited." Additionally, the Strategic Readiness Review stated that, "the lean fiscal environment, worsened by the BCA, coupled with a high operational demand for forces and reduced fleet levels, challenged the Navy even more, placing a heavy strain on the service. Coincidentally, as the BCA further constrained the fleet, it became clear that China was emerging as a peer Navy competitor."

The lean fiscal environment, coupled with a high operational demand for forces and reduced fleet levels, challenged the Navy even more and placed a heavy strain on the service. As the 2011 BCA further constrained the fleet, it became clear that China was emerging as a peer Navy competitor. China's adoption of advanced technology, its increasingly dispersed operations, and its doctrinal writings make clear that it aspires to a more robust regional capacity and global reach. Our peer competitors like China and Russia are quickly closing the technological gap. I need weapons systems of increased lethality that go faster and further, are networked, are more survivable, and affordable. If USPACOM has to fight tonight, I don't want it to be a fair fight. If it's a knife fight, I want to bring a gun. If it's a gun fight, I want to bring in the artillery, and the artillery of all of our allies. I have said during my last two appearances before this Committee, that sequestration could reduce us to wielding a butter knife in this fight. This is unacceptable. We must not let that happen. In order to deter potential adversaries in the Indo-Pacific, we must build a more lethal force by investing in critical capabilities and harnessing innova-

tion. We must develop a lethal, agile, and resilient force posture that decreases our vulnerabilities. The force posture must also reassure our allies and partners and encourage them to be full and cooperative partners in their own defense and the defense of the free and open international order.

Overall, I am grateful to Congress for the recent agreement on the DOD-budget caps for the next two years. The positive actions you took last week will help the DOD and USPACOM address many of the issues above, and I'm optimistic that the DOD is approaching an era of fiscal certainty. Over the long-term, fiscal certainty will allow us to build and train a force that is best postured to overcome the external challenges that we face in the Indo-Pacific.

CRITICAL CAPABILITIES

The most technological, high-end military challenges America faces in the region continue to grow. While forward presence, alliances, and partnerships address these challenges, USPACOM requires our most technologically advanced warfighting capabilities to fully meet them. The critical capabilities in this section demand our attention and treasure. We must preserve our asymmetric advantages in undersea and anti-submarine warfare, and we must strengthen our abilities to counter strategies designed to limit our freedom of action.

China has developed and fielded capability and capacity to challenge our regional maritime dominance. I need increased lethality, specifically ships and aircraft equipped with faster and more survivable weapons systems. Longer range offensive weapons on every platform are an imperative. We must also network this force and take advantage of man-machine teaming to improve our responsiveness.

Pacing the threats we face in the region is not an option in my playbook. We must work hard and invest the money to outpace the competition by developing and deploying the latest technology to USPACOM. Examples include: Navy Integrated Fires and the AEGIS Flight III destroyer and its new Air and Missile Defense Radar (AMDR); rotational deployment of Air Force and Marine Corps 5th generation fighters; and new systems capable of defending our vulnerable bases from the full spectrum of current and emerging threats (e.g., hypersonic missiles and armed unmanned aerial systems). These tools are essential in today's complex operating environment.

Munitions, Fuels, and Logistics Networks: Critical munitions shortfalls continue to be my top warfighting concern. Shortages in our munition inventories pose a significant threat to our combat readiness and exacerbate the effects of the peer competitors who continue to modernize their weapon systems and expand their inventories. It is critical that we retain our capability to operate in contested environments, which requires dedicated investment in the industrial base and the development of new concepts and technologies. Additionally, we must continue to expand Intermediate Nuclear Force Treaty-compliant theater strike capabilities to effectively counter adversary Anti-Access/Area-Denial (A2/AD) capabilities and force preservation tactics.

My priorities include multi-domain kinetic/lethal strike capabilities, including hypersonic, long-range strike, air-to-air missile, long-range precision fires, maritime strike, and integrated air and missile defense. Additional requirements include the command and control (C2) and integration of long-range, high-speed, lethal, survivable, and precision munitions capabilities in ships, submarines, patrol craft, land-based formations, bombers, and fighters. With respect to ship-to-ship and air-to-ship munitions that allow us to defeat an aggressor from greater range, we are pursuing capabilities similar to Long Range Anti-Ship Missile (LRASM) and Joint Air-to-Surface Standoff Missile—Extended Range (JASSM–ER). In the air-to-air realm, I continue to seek advancements in munitions that will provide us an advantage in a denied environment, such as the AIM–120D and AIM–9X air superiority missiles. We must continue to modernize and improve our torpedo and naval mine capabilities to maintain our undersea advantage. I appreciate Congress' efforts to address LRASM, JASSM, air-to-air missiles, and undersea warfare capabilities in the fiscal year 2018 NDAA. Continued improvements in the capability and capacity of ballistic/cruise missile defense interceptors will further enhance Homeland defense capabilities and protect key regional nodes from aggressive action. In support of the Korean Peninsula, the new policy on cluster munitions, signed 30 November 2017, helps to alleviate the capability gap created by the previous policy. However, I support efforts to acquire a replacement for cluster munitions—we need an area effects munition now.

As new inventory becomes available, storage capacity will become critical. As an example, we are beginning to see the storage capacity limitations play out as Services reposition munitions on the Korean Peninsula. Admittedly, this is a nice prob-

lem to have. Beyond the capacity challenges posed, our current, legacy storage locations are inadequate to store specific types of modernized munitions and meet the requirements of fiscal year 2021 Department of Defense Explosive Safety Standards. We are currently operating on waivers in many areas and assuming risk to meet mission requirements.

Fuel is the lifeblood of operations, and without resilient resupply capability, our operational effectiveness is severely degraded. Crucial to our ability to operate in increasingly contested and austere locations is the velocity of fuels support from source of supply to the point of use. Strategic positioning is a key pillar of our logistics posture. Ensuring we have the right fuel, in the right amount, at the right location, at the right time, is vital to USPACOM's ability to project power throughout the Indo-Pacific under combat conditions. USPACOM is closely integrated with the Defense Logistics Agency and the Services, and I am encouraged by the progress being made. In fiscal year 2018, investments are planned to increase fuels supply/operations infrastructure, storage, and resiliency in Guam, Japan, and Australia. I remain committed to building the capacity of our prepositioned war reserve stocks of fuel, including resiliency of the facilities, infrastructure, and distribution capabilities on which these stocks depend.

USPACOM's ability to project power is underpinned by strong airlift capabilities. Unfortunately, budget instability and ongoing continuing resolutions have driven inflexibility into these critical areas while the global strategic environment requires increased flexibility. In today's global competition for airlift, increased demand and limited resources hinder the joint force's ability to promptly achieve operational objectives. In war, this shortfall will result in greater loss of life, increased risk to USPACOM forces, and increased risk to our nation's credibility with partners and allies.

Strategic sealift assets play a significant role in PACOM's success. Whether during a contingency or during peacetime, the ability to deliver forces and sustain them with timely equipment, critical logistics, and service support is essential. Our adversaries continue to strengthen their capabilities, while many of our assets and platforms are approaching the end of their service life, resulting in shortfalls which reduce our ability to maintain sea supremacy. In order to adequately support current operations and prepare for future warfighter requirements, it is crucial that we increase investment in strategic sealift assets.

As the Indo-Pacific region becomes more connected to other regions and more influential, we must be prepared to anticipate the need for key enablers that will ensure our influence in the region remains strong. Preparedness is underwritten by logistics and sustainment capability, capacity, resiliency, and agility. Our logistics capability is one of the U.S. military's key asymmetric advantages around the world. Unfortunately, due to budgetary pressures and decades of global engagement, our logistics systems and infrastructure are struggling to support the full range of military operations in the Indo-Pacific region. No one aspect of our logistics system is broken; but when examined as a "system of systems," executed by logisticians, engineers, and medical experts, the overall logistics enterprise has become more vulnerable, or brittle, because the system has fewer redundancies. More specifically, risk against each key functional area in our logistics system has risen over the last decade. The slow erosion of our logistics system has been manifested in manpower cuts to key areas like maintenance manning or the consolidation of our engineers in the Pacific. Each service has made difficult choices –balancing modernization with recapitalization and sustainment. Smaller munitions inventories mean the overall logistics enterprise must make up for that limitation by better, faster distribution processes to get the right munition to the right place at the right time to support operations. Additionally, the Services have consolidated and centralized important wartime materiel to better set the globe or have consolidated and reduced logistics staffs. Those changes have exacerbated the challenges associated with PACOM's "tyranny of distance." The time consumed by logistically supporting operations from greater distances reduces my decision space in a very dynamic and fast paced crisis or contingency.

Taken collectively, the complex problem of getting the right stuff to the right place at the right time in a contested environment is a vexing problem made worse by the slow erosion of capability, capacity, and agility. That reality requires that we make faster, more accurate logistics decisions to support operations. The Indo-Asia-Pacific Stability Initiative (IAPSI) is the single most important initiative that can reverse a dangerous trend toward an inevitably brittle Joint Logistics Enterprise in the Pacific, and I'm thankful for Congress' efforts to fund IAPSI. Our logistics systems, infrastructure, key supplies, and processes are in need of replenishment with new equipment, better infrastructure, additional trained professionals, and innova-

tive logistics concepts to better prepare USPACOM for peer-level competition and large scale crises.

Air Superiority: For the last several decades the U.S. has enjoyed unmatched air superiority. The preponderance of aircraft ensuring this permissive air-domain has been 4th generation fighters and air-battle-management platforms, which have benefitted from a technology gap over any potential rival. Our potential adversaries, however, are rapidly closing this gap as both Russia and China have fielded their own versions of 5th generation fighters which threaten our ability to gain air superiority at a time and place of our choosing. In order to deter and defeat potential adversaries in the Indo-Pacific region, we must have the capability to quickly gain and maintain air superiority long enough to complete critical missions. The U.S. is now beginning to field 5th generation platforms in the Pacific; however, our legacy 4th generation platforms will be in our inventory for years to come, and we must be prepared to address future threats. While we continue to invest in 5th generation platforms, we must also find innovative ways to make our 4th generation aircraft and air-battle-management platforms more capable.

Undersea Warfare: USPACOM must maintain its asymmetric advantage in undersea warfare capability including our attack submarines, their munitions, and other anti-submarine warfare systems like the P–8 Poseidon and ship-borne systems. Roughly 230 of the world's 400 foreign submarines are in the Indo-Pacific, of which approximately 160 belong to China, DPRK, and Russia. Potential adversary submarine activity has tripled from 2008 levels, requiring an increase of U.S. activity to maintain undersea superiority. This growth of regional submarine fleets, and increasing demand from other Combatant Commands for SSNs, will challenge the Joint Force to address our SSN requirements in the decade ahead. The SSN imbalance will only be aggravated as the global U.S. Navy SSN inventory drops and submarines are retired faster than replacements are constructed. China is improving the lethality and survivability of its attack submarines, building quieter, high-end diesel and nuclear powered submarines, and has placed in service four nuclear-powered *Jin*-class ballistic missile submarines (SSBNs). An armed *Jin*-class SSBN will give China an important strategic capability that must be countered. Russia is modernizing its existing fleet of *Oscar*-class multi-purpose attack nuclear submarines (SSGNs) and producing their next generation Severodvinsk *Yasen*-class SSGNs. Russia has also homeported their newest *Dolgorukiy*-class SSBN in the Pacific, significantly enhancing its strategic capability. Current counter undersea capabilities include the Integrated Undersea Surveillance System (IUSS), including the Surface Towed Array Sensor Systems (SURTASS). While these platforms have operated since the early 1980s, these systems, along with the new autonomous Unmanned Underwater Vehicle technologies, play a key role in theater operations and must be resourced appropriately to ensure they remain relevant and capable. Maintaining pace with submarine activity growth is necessary and I support the Secretary of the Navy's 2016 "Force Structure Assessment" which calls for a 355-ship navy, including 66 attack submarines.

Intelligence, Surveillance, and Reconnaissance (ISR): The challenge of gathering credible, deep, and penetrating intelligence cannot be overstated. The Indo-Pacific presents a dynamic security environment requiring persistent and intrusive ISR to provide indications, warning, and situational awareness across a vast geographic area. Our treaty allies rely on U.S. ISR capabilities to support mutual defense treaties. ISR is required to prevent strategic surprise, buy decision space for national leadership, accurately assess the security environment, and defeat adversaries, if necessary. The rapid modernization of our peer competitors requires additional advancements in how our intelligence is collected and processed, including the associated risks. Our ISR capabilities must be suited to our unique operating environment.

Space and Cyberspace: USPACOM relies heavily on space-based assets for satellite communications (SATCOM), Intelligence, Surveillance, Reconnaissance (ISR), Missile Warning, and Positioning, Navigation, and Timing (PNT) capabilities to support missions across the range of military operations. USPACOM's region spans over half the globe and space-based assets are high-demand, low-density resources. As the electromagnetic spectrum grows increasingly congested and contested, our adversaries continue to develop means to deny our space-enabled capabilities. China continues to pursue a broad and robust array of counter-space capabilities, which include direct-ascent anti-satellite missiles, co-orbital anti-satellite systems, cyber-attack and exploitation capabilities, directed energy weapons, and ground-based satellite and PNT jammers. DPRK continues to develop and employ SATCOM and PNT jammers, while also continuing their development and testing of nuclear weapons and ballistic missiles despite UNSCR 1718 prohibiting such activities.

USPACOM faces constant threats in the cyber domain from both state and non-state actors, such as China, DPRK, Russia, and criminal actors. The United States must ensure it has a robust and capable cyber force, as well as the equipment necessary to maintain command and control of our forces. USPACOM requires an agile and defensible mission command network infrastructure to enable interoperability with our allies and mission partners to fully leverage our combined capacity. In addition, offensive cyber capabilities provide additional tools to use as part of tailored options that bolster multi-domain effects, but these capabilities must grow faster. As we work across the interagency environment to develop whole-of-government solutions, we require a workforce that strikes the right balance between cyber forces assigned in the theater, working directly for USPACOM and its subordinates, and forces assigned to USCYBERCOM and other U.S. Government agencies at the national level.

Integrated Air and Missile Defense (IAMD): USPACOM faces unique Integrated Air and Missile Defense (IAMD) challenges despite efforts to forward station additional IAMD sensors and weapons capabilities in the Indo-Pacific to protect our forces and allies. Hawaii, Guam, and our Pacific territories are part of our Homeland and must be defended. Hawaii is currently protected from DPRK intercontinental ballistic missiles (ICBMs) by the Ground-Based-Midcourse Defense System. This system includes Ground-Based Interceptors in Alaska and California; ground-, sea-, and space-based sensors; and redundant command, control and communications systems. For the defense of Hawaii, the Homeland Defense Radar—Hawaii (HDRH) siting process is near complete. The Missile Defense Agency (MDA) plans to compete and award a Pacific Radar contract in fiscal year 2018 and deliver an initial capability by fiscal year 2023. The new radar will provide an enhanced ballistic missile sensing and discrimination capability in the Pacific, and will increase the capability of the Ground-Based Midcourse Defense System to defend the state of Hawaii. This radar is being built to stay ahead of potential future threats. DPRK's 3 September 2017 nuclear test, its KN–22 "Hwasong-15" ICBM test launch on 28 November 2017, and DPRK's continuing research and development of submarine launch ballistic missile technology, demonstrates the DPRK's desire for greater technical performance and capability. Also, China and Russia continue to develop and operationally field advanced counter-intervention technologies which include fielding and testing of highly maneuverable re-entry vehicle/warhead (i.e., hypersonic weapons) capabilities that challenge U.S. strategic, operational, and tactical freedom of movement and maneuver. China and Russia also present other notable challenges in the form of cruise missiles and small-unmanned aircraft systems (s-UAS) which fly different trajectories, making them hard to detect, acquire, track, and intercept due to unpredictable low-flight profiles and high-potential use of countermeasures. I support MDA's intent to formally study the efficacy of putting an interceptor capability in Hawaii.

USPACOM's IAMD priority is to establish a persistent, credible, and sustainable ballistic missile defense presence by forward deploying the latest advancements in missile defense technologies to the Indo-Pacific. Through their forward and persistent presence, these active missile defense capabilities help mitigate the risk to missile threats that USPACOM faces in the AOR. USPACOM continues to work with the Department of Defense (DOD), our academic institutions and industry to improve or deploy systems capable of countering the missile threat challenges in the Indo-Pacific.

USPACOM maintains an active Terminal High Altitude Area Defense (THAAD) battery on Guam to protect our fellow citizens and strategic military capabilities from the threat of DPRK intermediate-range ballistic missiles (KN–17 and MUSUDAN). USPACOM also employs additional radars across the theater to support Homeland defense and testing of the Ballistic Missile Defense System (BMDS). Additionally, USPACOM is supporting MDA's siting-study to identify a home for the new Homeland Defense Radar in Hawaii.

USPACOM and USFK, with the support from the MDA and the DOD, deployed a Terminal High Altitude Area Defense (THAAD) battery to the Korean peninsula in 2017 that is fully operational. The U.S. Navy is moving forward with the port shift of the USS *Milius* from San Diego to Yokosuka, Japan this spring. This port shift provides the U.S. Seventh Fleet with improved capability to support the United States-Japan alliance. USPACOM will continue working with Japan, the ROK, and Australia to improve our level of staff coordination and information sharing with the goal of creating a fully-integrated Ballistic Missile Defense (BMD) architecture that addresses the increasing cruise missile threat.

USPACOM continues to support MDA and the Services to develop and test emerging missile and counter-small UAS defense capabilities through modeling and simulation, as well as live-fire testing conducted at the Pacific Missile Range Facility, the Ronald Reagan Test Center at Kwajalein Island, Point Mugu, and other testing

the Ronald Reagan Test Center at Kwajalein Island, Point Mugu, and other testing ranges located on the continental United States and Alaska. These tests encompass a number of developmental flight tests including: Standard Missile-3 (SM–3) Block IB Threat Upgrades; Distributed Ground Tests to assess the performance of the Ballistic Missile Defense System; two Standard Missile-6 (SM–6) missiles against a complex medium-range ballistic missile target; and SM–3 Block IIA allowing longer flight times and engagements of more complex threats higher in the exo-atmosphere. USPACOM will continue to support future flight tests to help improve the Ballistic Missile Defense System performance against more complex threats. Going forward, USPACOM supports all efforts that improve the capability and capacity of ballistic missile, cruise missile, and UAS defense technologies to further enhance Homeland defense capabilities and protect key regional locations from aggressive action. The development of a credible and effective defense against advanced and future missile and UAS threats remains vital to our operational plans and critical to the continued defense of the U.S.

Innovation: USPACOM increasingly relies on innovation to address USPACOM's capability gaps and maintain our military advantage. This includes testing and integrating new technologies, developing new capabilities, and exploring new concepts of operation and employment. This multi-pronged approach to innovation is paying dividends, and my innovators are getting these capabilities into the hands of the warfighters quickly in order to enhance our ability to fight tonight. Advances in man/machine teaming, artificial intelligence, machine-learning, hypersonic technology, autonomy, and command and control will enable the Joint Force to maintain a velocity of precision operations our adversaries simply cannot match. USPACOM's ability to conduct operationally realistic exercises where we can rigorously test our innovative ideas makes me confident we will continue to identify, test, evaluate, and integrate the best technology our industry offers.

Capitalizing on the vast open spaces of the Pacific, USPACOM runs the most complex field exercises in the world. For example, the Joint Pacific Alaska Range Complex (JPARC) is a premier location to focus on joint air and electronic warfare exercises, while the Pacific Missile Range Facility and ranges near Guam provide excellent opportunities to test naval and missile innovations. USPACOM forces conducted over 50 more warfighting experiments in 2017 than any year before. I believe we can take this construct to the next level by combining innovation across multiple areas: operational planning, cutting-edge technologies, modeling and simulation, and execution of multi-Combatant Command exercises.

Our innovation successes would not be possible without strong partnerships. USPACOM benefits from our continued relationships with organizations across the DOD, including the Defense Advanced Research Project Agency, the Defense Innovation Unit-Experimental, Service laboratories and innovation offices, national laboratories, university-affiliated research centers, and industry. USPACOM has also significantly increased its interaction with U.S. Special Operations Command, and we continue to work closely with the OSD Strategic Capabilities Office (SCO) to develop and field game-changing technologies for the Indo-Pacific.

Fires . . . Achieving Multi-Domain Battle (MDB): Multi-domain battle is the ultimate joint concept that allows commanders to achieve cross-domain effects while mitigating significant advancements in our adversaries' ability to out-range and outgun some of our most advanced platforms and systems.

We have made significant progress in the past 12 months. This year, the Army and the Marine Corps "signed out" Version 1.0 of this warfighting concept in a document titled U.S. Army and Marine Corps Concept, Multi-Domain Battle: The Evolution of Combined Arms for the 21st Century. This concept describes how U.S. and partner forces organize and employ capabilities to project and apply power across domains, environments, and functions over time and physical space to contest adversaries in relative "peace" and, when required, defeat them in "war." The concept of MDB seeks a common and interoperable capability development effort to provide Joint Force Commanders complementary and resilient forces to prosecute campaigns and further the evolution of combined arms for the 21st Century.

In execution, MDB broadens the options for Joint Force Commanders and poses a corresponding dilemma for our adversaries. Version 1.0 of this concept formally transitions emergent concepts and ideas to experimentation. The complementary capabilities described in this concept provide an initial set of ideas to test with regard to employment and capability requirements, while supplementary capabilities required for combined arms and maneuver serve as a starting point for common capability development efforts between the Army, Marine Corps and their joint partners. Our joint forces will revise this concept to Version 2.0, refining ideas and corresponding solution set by incorporating the results of experimentation, as well as other Service and Joint perspectives.

I recently asked the USPACOM component commands to test MDB operational concepts as part of our Joint Exercise Program, to include demonstrations in one of our major capstone events—the Rim of the Pacific exercise (RIMPAC '18). Implementing a "crawl-walk-run" methodology, we will move from discrete events across domains to the fusion of joint capabilities across domains in a sensor to shooter agnostic environment that is both contested and integrated across the combined force. In keeping with the MDB concept vision—we will progress from experimentation to validation of concepts, culminating in a validation and demonstration of the Army's new Multi-Domain Task Force during the RIMPAC '20 exercise.

We will capitalize on the existing MDB capabilities resident in much of our force, but in order to maintain our competitive edge, we must continue our rapid pursuit of new technologies and approaches. One of the biggest capability gaps in terms of joint effects is the lack of complete connectivity and integration between the Services' operational and tactical ISR, target acquisition, and fire control systems—such as the Navy's Cooperative Engagement Capability (CEC), the Army's Advanced Tactical Field Artillery Target Data Systems, Army's THAAD and Patriot Systems, and the USMC's C2 systems. Together with the Services, USPACOM is working to solve these problems with the Joint Staff and OSD.

STRATEGIC FORCE POSTURE IN THE INDO-PACIFIC

The Joint Force is forward-stationed throughout the Indo-Pacific region to deter conflict or to defeat adversaries should deterrence fail. The tyranny of distance, mobilization timelines for reserve component enablers, and strategic lift constraints hinder the ability to generate force flow early in a crisis. While USPACOM remains focused on fielding credible combat power, gaining access to new locations, upgrading existing operating locations, and encouraging whole-of-government approaches to deter and confront regional adversaries are all critical to preserving our positional advantage in the region. As challenges in the Indo-Pacific region continue to evolve, the importance of infrastructure recapitalization and the fielding of advanced capabilities have increased.

Global Force Management (GFM): Credible combat power offers the greatest potential for meeting the Indo-Pacific region's complex security issues and enables our ability to prevail in combat. The DOD continues to strongly support USPACOM GFM priorities through the assignment of critical platforms and capabilities in Alaska and on the West Coast. USPACOM continues to prioritize forward stationing and deployment of 5th generation aircraft in the Indo-Pacific, to include the first Marine Corps F–35B Joint Strike Fighters to Japan in January 2017 and the first Air Force F–35A squadron to the Republic of Korea in November 2017. In addition, United States commitment to the Indo-Pacific is further evidenced by the deployment of our newest and most advanced aviation platforms such as the P–8 Poseidon, RQ–4 Global Hawk, MV–22 Osprey, EA–18G Growler, E–2D Hawkeye, and C–130J Super Hercules.

The long-range capabilities of U.S. bombers are well suited for the Indo-Pacific region due to the vast distances and unique challenges. This mission enables Joint Force readiness and commitment to extended deterrence, offer assurances to our allies and partners, and strengthen regional security and stability in the Indo-Pacific region.

In addition to the Pacific Pathways deployments and posture commitments, the Army is assessing existing U.S. inventories to prioritize requirements for focused readiness, critical munitions, sustainment stocks, mobility shortfalls, chemical defense, and facility operations within the region.

The culmination of joint and combined force operations with our Service components and our partner nations in the Indo-Pacific region in 2017 was the three-carrier strike force exercise in the Western Pacific. USS *Ronald Reagan* (CVN 76), USS *Nimitz* (CVN 68), and USS *Theodore Roosevelt* (CVN 71) strike groups conducted coordinated operations in international waters to demonstrate the Navy's unique capability to operate multiple carrier strike groups as a coordinated strike force effort.

Force Posture Initiatives: USPACOM's ability to execute national tasking and meet national objectives is reflected in military construction investments that support increased resiliency for the Joint Force via projects in Japan, Guam, the Commonwealth of the Northern Mariana Islands (CNMI), and Australia. The vast distances associated with the Indo-Pacific, coupled with the short timelines to respond to crises, require investment in infrastructure to properly preposition capabilities and capacity throughout the region. Military construction supports critical capabilities to include Unmanned Aerial Vehicles for increased intelligence, surveillance and reconnaissance (Republic of Korea), Cyber Mission Force teams (Hawaii), Special Operations Forces (Japan), increased critical munitions storage capacity in

Washington State, and quality of life investments for the Joint Force and their families in Guam, Republic of Korea, Japan, and the Republic of the Marshall Islands.

Host country support at 23 established operating locations in the Indo-Pacific region remains robust overall. The U.S. military receives approximately $37 billion in new construction at a cost of less than $7 billion to the United States taxpayer in the Indo-Pacific region. The Government of Japan committed resources in 2013 that continue to assist in the strategic realignment of United States Marine forces from Okinawa to Guam and other locations as a part of the Defense Posture Realignment Initiative (DPRI). Additionally, the Government of Japan is supporting the airfield expansion work underway at the Marine Corps Air Station Iwakuni, Japan and the Futenma Replacement Facility. The Republic of Korea continues to support the work on the Land Partnership Plan and Yongsan Relocation Plan, which are estimated to be finished within the next 4 years. Outside of the above initiatives, Japan and the Republic of Korea continue to provide other funding and support, which play a critical role in sustaining United States presence in the region.

USPACOM continues to execute five major force posture initiatives: (1) United States-Japan Defense Policy Review Initiative (DPRI) / USMC Distributed Laydown; (2) United States Forces Korea Realignment; (3) Resiliency; (4) Agile Logistics; and (5) Agile Communications.

Defense Posture Realignment Initiative (DPRI)/USMC Distributed Laydown: DPRI is a vital part of the larger U.S. military Integrated Global Basing and Presence Strategy. A major goal of DPRI is to create an environment that is geographically distributed, operationally resilient, and politically sustainable to better support the enduring presence of United States Forces in Japan. USPACOM maintains significant focus and effort on these initiatives. DPRI is one of the largest construction efforts since the end of the Cold War. Much work by both the United States and Japan remain, but progress is being made towards realigning some United States Marines from Okinawa to Guam and build-up of facilities at other locations such as Marine Corps Air Station (MCAS) Iwakuni, Japan. Military construction investments in the fiscal year 2018 NDAA include projects for DPRI in Guam and Iwakuni. Another critical cooperative effort, the Futenma Replacement Facility (FRF) at Camp Schwab/Henoko will enable the United States to fulfill its security obligations to Japan while also enabling the return of MCAS Futenma to Okinawa. In the past year, top leaders from the United States and Japan have reaffirmed the commitment of both countries to construct the FRF. This solution maintains our presence at MCAS Futenma until the FRF is completed.

USFK Realignment: The consolidation of United States Forces in the Republic of Korea via the Land Partnership Plan (LPP) and Yongsan Relocation Plan (YRP) continues to progress as planned. Posture priorities remain the relocation of thousands of United States personnel to bases south of Seoul and setting conditions to support United Nations Command and the ROK–United States Combined Forces Command. The United States is committed to maintain the current level of United States military personnel assigned to the Republic of Korea through the next five years, at which point the Joint Force will become strategically flexible and exercise freedom of action throughout the AOR.

Resiliency: The Joint Force remains ready to fight tonight across all domains in the Indo-Pacific. USPACOM ensures sustained power projection capabilities exist forward in theater, and generates resiliency through the dispersal of our capabilities and the decisive aggregation of effects. USPACOM resiliency efforts include investment in more robust infrastructure in ally and partner countries and the hardening of critical facilities. USPACOM also works to disperse critical enablers, including communication nodes, fuel repositories, medical readiness centers, and logistic support equipment.

Agile Logistics: Combat operations in a contested environment require U.S. forces to disperse across multiple locations, both inside and outside the enemy's operational reach. We can no longer rely on the past strategy of consolidating in large, central locations that position combat capabilities close to the fight to maximize efficiency and time on target. To survive, our warfighters must move quickly in and out of enemy fire, placing a greater burden on the units that support them. Logistics plans can no longer construct central basing stockpiles of critical sustainment materiel without fear of attack. USPACOM must disaggregate those stockpiles, anticipate demand, and adapt to the speed of operational maneuver. Supported by other Combatant Commands and strategic partners, USPACOM is working to develop an agile, resilient logistics network, to included sophisticated logistics decision support tools.

Agile Communications: USPACOM must work with mission partners in order to further national objectives throughout the Indo-Pacific region. Five of seven U.S. Mutual Defense Treaties exist in the USPACOM area of responsibility (AOR), which

translates to five alliances of national militaries that must operate together as a unified force on a daily basis and through all phases of planned operations. Similarly, USPACOM does not have formal agreements for exchanging information with many of the nation states or organizations within the USPACOM AOR, giving rise to the need for dynamic information technology capabilities to support the full spectrum of military operations. Agility with coalition information sharing environments that allow for the rapid addition or removal of mission partners must be available on short notice to adequately respond to natural disasters and contingencies in order to synchronize efforts, achieve synergistic results and to ensure forces do not interact with each other in a negative manner. As a result, we are not fully postured with the latest technology to interoperate with multiple partner combinations over all the phases of military operations. Furthermore, we will not have the communication capacity and sharable encryption capability to support the most modern warfighting platforms and associated weapon systems as they are built and deployed.

Indo-Asia-Pacific Stability (IAPSI) Initiative: I'm grateful for the inclusion of IAPSI in the Fiscal Year 2018 NDAA. IAPSI supports a number of the force posture initiatives addressed in this section, including enhanced resiliency and increased logistical agility. Overall, IAPSI helps USPACOM fully leverage the capabilities of our allies and partners, while also signaling our persistent commitment to the region.

Readiness: USPACOM is a "fight tonight" theater with short response timelines across vast spaces. Threats as discussed earlier require U.S. military forces in the region maintain a high level of readiness to respond rapidly to crisis. USPACOM's readiness is evaluated against its ability to execute operational and contingency plans, which place a premium on forward-stationed, ready forces that can exercise, train, and operate with our partner nations' militaries and follow-on forces to respond to operational contingencies. Forward-stationed forces west of the International Date Line increase decision space and decrease response times, bolster the confidence of allies and partners, and reduce the chance of miscalculation by potential adversaries.

The ability of the U.S. to surge and globally maneuver ready forces is an asymmetric advantage that must be maintained. Over the past two decades of war, the U.S. has prioritized the readiness of deploying forces at the expense of follow-on-forces and critical investments necessary to outpace emerging threats. As a result of high operational demands, delayed maintenance caused by sequestration and ongoing Continuing Resolutions (CR), and training pipeline shortfalls, a shortage of ready surge forces limit USPACOM's responsiveness to emergent contingencies and greatly increases risk. These challenges grow each year as our forces continue to deploy at unprecedented rates. We are overstressing the force as the Services are unable to establish conditions to reset their force elements with the current fiscal instability.

Past budget uncertainty degraded USPACOM's ability to plan and program, leading to sub-optimal utilization of resources. Fiscal uncertainty forces the Department to accept risk in long-term engagement opportunities with detrimental strategic consequences to U.S. relations and prestige. Services must be able to develop and execute long-term programs for modernization while meeting current readiness needs. Constrained budgets over the last few years forced choices within the Services that have limited procurement and fielding of 5th generation fighter aircraft (F–35) in sufficient quantities and modernization of 4th generation aircraft (F–15, F–16, F/A–18) essential to prevent capability gaps and to maintain pace with potential adversary advancements. Much of the supporting infrastructure in the Pacific and on the West Coast of the continental United States was established during World War II and during the early years of the Cold War. The infrastructure requires investment to extend its service life but the Services struggle to maintain infrastructure sustainment, restoration, and modernization accounts at appropriate levels. Similarly, the shadow of budget uncertainty has exacerbated the industrial base's inability to meet and respond to increasing requirements to replace expenditures and field new systems and technologies. If funding uncertainties continue, the U.S. will experience reduced warfighting capabilities and increased challenges in pacing maturing adversary threats.

ALLIES AND PARTNERS

U.S. national power depends on more than a robust economy and military strength: we need allies and partners. Our network of alliances and partnerships, established over the past 70-plus years, has contributed to the free and open order that we enjoy today. These countries do not follow U.S. lead on all issues, but allies

and partners provide a foundation for like-minded nations to draw upon when dealing with major issues or crises. Australia, Japan, Republic of Korea, Philippines, and Thailand have all been long-standing allies, but Congress' designation of India as a "Major Defense Partner" in 2016 provides USPACOM the opportunity to forge a new relationship with the world's largest democracy. A robust network of allies and partners creates an environment of cooperation to work together on shared challenges.

USPACOM is directly connected to regional leaders. I am in frequent communication with my regional counterparts and appreciate the ability to reach out at any time to share perspectives. USPACOM maintains a close link with allies and partners through staff exchange and liaison officers, in addition to a series of formal bilateral mechanisms. In Australia, key engagements stem from the Australia-New Zealand-United States security treaty and are guided by USPACOM's principal bilateral event with Australia, the Military Representatives Meeting, which leads up to the Australia-United States 2+2 Ministerial Meeting with SecDef/SecState and their Australian counterparts. Similarly, the annual Joint Senior Leader Seminar guides USPACOM's military-to-military relationship with Japan. The Military Committee and Security Consultative Meetings are the preeminent bilateral mechanisms that guide the United States alliance with the Republic of Korea (ROK). Each year USPACOM and the Armed Forces of the Philippines co-host the Mutual Defense Board and Security Engagement Board to deal with 21st Century challenges. USPACOM conducts annual Senior Staff Talks with Thailand to address security concerns and reinforce United States commitment to democratic principles. USPACOM also conducts annual formal bilateral activities with non-alliance partners throughout the region, including Bangladesh, India, Indonesia, Malaysia, Singapore, and Vietnam.

Our multilateral cooperation is further enhanced by numerous Flag and General Officer (FOGO) exchange officers that work for the U.S. at USPACOM. These foreign officers from our "Five Eye" (FVEY) partners (Australia, Canada, New Zealand, and United Kingdom) serve under my Command as fully integrated members of the USPACOM team. Our operations and intelligence watch centers are FVEY environments and FOGOs are embedded within USPACOM and our service components

Bilateral and Multinational "Partnerships with a Purpose": The future lies in multilateral security mechanisms. USPACOM is broadening key bilateral relationships into multilateral "partnerships with a purpose" that will more effectively address shared security concerns. For example, the United States-Japan-Republic of Korea multilateral coordination in response to the DPRK's provocative behavior, while challenging, is improving. The ROK and Japan each recognize that provocative actions by the DPRK will not be isolated to the peninsula and greater coordination and cooperation are required. Historical tensions between the nations remain, but cooperation and collaboration are slowly improving. The November 2016 signing of the Japan-Republic of Korea General Security of Military Information Agreement (GSOMIA) is a major accomplishment in improving bilateral relations between Seoul and Tokyo; the GSOMIA lays an essential foundation for expanding cooperation and enables the U.S. to work more closely with both allies. Recognizing the benefits of this bilateral agreement, in November 2017, the Republic of Korea and Japan renewed GSOMIA for another year. I look forward to increasing the frequency and complexity of multilateral information sharing while simultaneously enhancing multilateral security cooperation.

To encourage multilateral cooperation, USPACOM hosts the Chiefs of Defense Conference (CHODs) annually. The CHODs conference location normally rotates between Hawaii and a regional partner. In 2017, 30 countries attended the CHODs conference in Victoria, Canada. USPACOM also participates in Australia-Japan-United States multilateral defense dialogues, including the Security and Defense Cooperation Forum (SDCF).

The multilateral relationship between the United States, Japan, and India is growing stronger as well. All three countries share democratic values, interests in protecting sea-lanes of commerce, and respect for international law. On the security front, all three countries participate in India's increasingly complex annual Malabar military exercise as well as the multinational Rim of the Pacific exercise.

In Southeast Asia, Indonesia, Malaysia and the Philippines formed a multilateral relationship aimed at countering violent extremists through coordinated maritime and air patrols. Additional Southeast Asia nations, such as Brunei and Singapore, and other Indo-Pacific regional nations, such as the United States, Japan, and Australia are all supporting the multilateral initiative through various support missions.

Allies

Australia: The United States-Australia alliance anchors peace and stability in the region. Australia plays a leading role in regional security, capacity-building efforts and addressing disaster response. Australia is a key contributor to global security and a significant contributor to counter-ISIS efforts in Iraq and Syria and the Resolute Support mission in Afghanistan. With the implementation of force posture initiatives, the Marine Rotational Force-Darwin successfully completed its sixth deployment while maintaining a presence of 1,250 U.S. Marines. The seventh deployment begins in April 2018 and will consist of approximately 1,500 U.S. Marines with future growth informed by capability requirements and budget resource availability. The 2018 deployment will include ten MV–22 Osprey aircraft, providing a more robust capability. The deployment of USAF F–22s to Australia for integration with Royal Australian Air Force E/A–18G, F/A–18F, and/or E–7A as part of the Enhanced Air Cooperation force posture initiative will build upon the initial activities that occurred in 2017 by increasing the complexity of mutual tactics, techniques, and procedures. The United States and Australia are increasing collaboration in counter-terrorism, space, cyber, integrated air missile defense, and regional capacity building. Australia is procuring high-tech United States platforms that will further increase interoperability. These include the F–35A Lightning II, P–8 Poseidon, C–17 Globemaster III, EA–18G Growler, Global Hawk UAVs, and MH–60R helicopters. To enhance interoperability, the Australian Government provides a General Officer to USPACOM and a General Officer to United States Army Pacific on a full-time basis. Australia has also set a goal of reaching 2 percent of its GDP on defense spending over the next decade.

France: As a NATO ally, France has significant equities in the Indo-Pacific, and I welcome France's growing involvement in the region. The French territories in Polynesia and New Caledonia make France the sixth largest nation on the planet by area, which translates into an Economic Exclusion Zone (EEZ) of over 166,000 square miles. The French navy maintains a professional military force in both territories, focused primarily on maritime security. But, France aims to become more involved across the Indo-Pacific writ large. Not only is France providing submarines to Australia and India, France is currently operating a combatant frigate (FF VENDEMIARE) in the East and South China Seas with United States Pacific Fleet. France also maintains a contingent of forces on New Caledonia and remains active in support or regional Humanitarian Assistance and Disaster Relief operations. During my recent visit to New Caledonia, the French military Commander indicated a strong desire to increase their training interaction with USPACOM forces, and we are developing opportunities for increased interaction. Overall, I am very excited about France's increased willingness to stand by the United States as we confront revisionist state and non-state actors across the region.

Japan: The United States-Japan alliance remains the cornerstone for peace and stability in the Indo-Pacific region. Operational cooperation and collaboration between USPACOM and the Japan Joint Staff continue to increase. Japan's Peace and Security Legislation authorizing limited collective self-defense operations and the revised 2015 Guidelines for United States-Japan Defense Cooperation have significantly increased Japan's ability to contribute to regional stability more broadly. Japan continues to support USPACOM activities to maintain freedom of navigation in the South China Sea, and remains concerned about Chinese activities in the East China Sea. We are strengthening our alliance with Japan, including through reviewing our roles, missions and capabilities, to ensure seamless alliance responses across a full spectrum of situations amid an increasingly challenging regional security environment. Japan is procuring high-tech United States platforms that will increase interoperability such as the F–35B, E–2D Hawkeye, Global Hawk UAS, and MV–22 Osprey; it has also announced its intentions to procure AEGIS Ashore.

Republic of Korea (ROK): The United States-ROK alliance is ironclad, and our commitment to the Republic of Korea is unwavering. We continue to work with our close friend and ally, as it moves toward obtaining the capabilities required under the Conditions-Based Operational Control (OPCON) Transition Plan (COT–P). In response to the evolving threat posed by the DPRK, the United States in coordination with the Republic of Korea, deployed a THAAD system to improve alliance missile defense posture. The Republic of Korea is also procuring high-tech United States platforms that will further increase interoperability to include the F–35B, P–8 Poseidon, AH–64 Apache, and Global Hawk UAS.

The resumption of inter-Korean dialogue in January and the North's decision to participate in this month's PyeongChang Olympic Games are encouraging developments, but any future talks with the DPRK must be focused on achieving a complete, verifiable, and irreversible denuclearization of the Korean peninsula. Accordingly, the alliance will maintain a high military readiness posture and will continue

to provide support for the diplomatic pressure campaign through credible combat deterrence.

The Philippines: The United States-Philippine alliance has demonstrated resilience through President Rodrigo Duterte's pursuit of an independent foreign policy. The tenor of our bilateral relationship has improved over the past year, due in part to the relationship-reset in President Duterte's personal interactions with President Trump. Through frank and frequent dialogue with Philippine leadership, we continue to maintain a robust defense relationship comprised of 261 activities for calendar year 2018, slowly expanding parameters of military-to-military cooperation. In particular, we have obtained Philippine commitment to resuming live fire exercises and close air support training. The attack on Marawi City in Mindanao by ISIS–P posed a significant challenge to the Armed Forces of the Philippines (AFP) and served as a reminder of the value of our alliance to Philippine security and stability. United States support, primarily in the form of providing Intelligence, Surveillance, and Reconnaissance (ISR), tactical advice, and the use of our Mutual Logistics Support Agreement (MLSA) to assist in the timely delivery of weapons and ammunition, proved crucial in the AFP's defeat of ISIS–P in Marawi. Our quick response to addressing AFP needs helped to bolster the bilateral relationship. Our military cooperation supports a broader whole-of-government approach to countering terrorism and building resiliency and capacity in Mindanao, as well as continuing to work together to modernize the AFP. While the government of the Philippines refocused attention on internal security to address short-term security and political challenges in Mindanao, we must not lose sight of the long-term objectives of building a territorial defense capability and creating a modern and self-sufficient AFP. Strategic patience has helped recalibrate the alliance relationship. I am convinced that the relationship pendulum will continue to swing in a positive direction and will continue to stabilize the region as it has for over 60 years.

Thailand: Our deep and longstanding military-to-military ties with Thailand go back to our 1950 Agreement Respecting Military Assistance between the Government of the United States of America and the Government of Thailand. Despite recent challenges, we remain close allies and important security partners. Our alliance is back on track at senior levels, capping off a year of re-engagement that included multiple 4-star visits, Secretary Mattis' visit to Bangkok for the Royal Cremation, and POTUS' hosting the Prime Minister at the White House. These discussions aimed to "Reinvigorate the Alliance," and we have communicated that strengthening the alliance is a shared responsibility. Overall mil-to-mil engagements are also on a positive trajectory. Thailand facilitates world-class training opportunities for United States personnel across all services, and co-hosts Exercise Cobra Gold with us, Asia's largest multinational military exercise. Thailand provides logistical nodes essential to our forces operating throughout the Indo-Pacific region. Funding for International Military Education and Training (IMET) and Foreign Military Financing (FMF) are currently restricted, but a Foreign Military Sales (FMS) and Direct Commercial Sales (DCS) relationship continues. Thailand has publicly committed to hold national elections in November 2018, and our continued engagement with military leadership remains the best way for the United States to promote regional security and healthy civil-military relations in Thailand.

United Kingdom: I'm excited about the trend of UK involvement in the Indo-Pacific. As a key NATO ally, the UK continues to support United States logistics and ISR operations across multiple Combatant Commands from the Indian Ocean territory of Diego Garcia. The UK is also looking to become more involved in maritime security in the Indo-Pacific. The HMS Sutherland, a Type 23 Frigate, is currently conducting combined maritime operations with U.S. Pacific Fleet in Southeast Asia, and I expect this type of interaction will increase in the years to come.

PARTNERS

India: The United States-India strategic partnership continues to advance at a historic pace and has the potential to be the most consequential bilateral relationship of the 21st Century. The United States and India maintain a broad-based strategic partnership that is underpinned by shared democratic values, interests, and strong people-to-people ties, and I expect 2018 to be a significant and eventful year in United States-India relations. The United States and India are natural partners on a range of political, economic, and security issues. With a mutual desire for global stability and support for the rules-based international order, the United States and India have an increasing convergence of interests, including maritime security and domain awareness, counter-piracy, counterterrorism, humanitarian assistance, and coordinated responses to natural disasters and transnational threats. India will be among the United States' most significant partners in the years to come due to

its growing influence and expanding military. As a new generation of political leaders emerge, India has shown that it is more open to strengthening security ties with the United States and adjusting its historic policy of non-alignment to address common strategic interests. The United States seeks an enduring, regular, routine, and institutionalized strategic partnership with India. USPACOM identifies a security relationship with India as a major command line-of-effort. Over the past year, United States and Indian militaries participated together in three major exercises, executed more than 50 other military exchanges, and operationalized the 2016 Logistics Exchange Memorandum of Agreement (LEMOA). Defense sales are at an all-time high with India operating United States-sourced airframes, such as P–8s, C–130Js, C–17s, AH–64s, and CH–47s, and M777 howitzers. USPACOM will sustain the momentum of the strategic relationship generated by the POTUS–Prime Minister-level and the emerging 2+2 Ministerial Dialogue through strengthening our military-to-military relationship and working toward additional enabling agreements to enhance interoperability. At the moment, India is considering a number of United States systems for purchase, all of which USPACOM fully supports: the F–16 for India's large single-engine, multi-role fighter acquisition program; the F/A–18E for India's multi-engine, carried-based fighter purchase; a reorder of 12–15 P–8Is; a potential purchase of SeaGuardian UAS; MH–60R multi-role sea-based helicopter; and F–35 Joint Strike Fighter.

Indonesia: Indonesia plays an essential role as the maritime fulcrum of Southeast Asia. We maintain a robust defense relationship comprising over 200 annual activities as part of our Strategic Partnership. USPACOM continues to partner with Indonesia, particularly in maritime security. Indonesia desires to play a larger role in international economic and security issues. Their goal to provide 4,000 deployable peacekeeping troops by 2019 is another important area where we can engage. Indonesia continues to build and exercise in strategic maritime border areas to bolster its defense capabilities, and has concerns with Chinese activities in the vicinity of the Natuna Islands. The money spent on professional military education and technical training in Indonesia has borne fruit in terms of Foreign Military Sales of excess defense article F–16s and new AH–64 Apaches. The Government of Indonesia is also considering the F–16 for the recapitalization of the Indonesian Air Force's aging fleet of fighter aircraft, most of which are of Russian origin.

Malaysia: Our close security ties with Malaysia are based on our Comprehensive Partnership. Malaysia's regional leadership role, technologically advanced industry, sizeable economy, and capable military make it an important partner in securing peace and prosperity in Southeast Asia. Over the past year, Malaysia has implemented air and maritime patrols in the Sulu and Celebes Seas in accordance with a multilateral arrangement with the Philippines and Indonesia due to increased security concerns in East Malaysia. We have worked closely with Malaysia as co-chairs of ASEAN's Humanitarian Assistance and Disaster Relief (HADR) working group. Malaysia also has an on-going dispute with China with respect to the Luconia Shoals, which China also claims. Malaysia has demonstrated the capacity and resolve to contribute to regional security, and we continue to support Malaysia's emerging security requirements. Malaysia recently selected MD–530 attack helicopter, and the United States is also providing Malaysia with secure communications equipment to increase interoperability in maritime security and counter-terrorism missions.

Mongolia: Mongolia endures as a small, yet strong, partner in Northeast Asia and continues to demonstrate staunch support for United States regional and global policy objectives—especially those linked to the Global Peace Operations Initiative and security operations in Afghanistan. The government engages with the U.S. and other countries as part of their "Third Neighbor" policy. Mongolia also markets itself as a model for emerging democratic countries such as Burma, Nepal, and Timor Leste. My deputy visited Mongolia last summer and spoke at the Exercise KHAAN QUEST 2017 closing ceremony, reaffirming that USPACOM's goals are to assist the Mongolian Armed Forces through their defense reform priorities. These priorities include: development of professional military education for officers and non-commissioned officers; developing a professional NCO corps; and developing an Air Force and ready reserve force. The Mongolians punch above their weight and we should continue to support them where we can.

New Zealand: The United States-New Zealand partnership remains on solid footing and continues to evolve. New Zealand is increasing its leading role in regional security and capacity-building efforts while addressing disaster response in the South Pacific and Antarctica. New Zealand is a key contributor to global security and a significant contributor to counter-ISIS efforts in Iraq and Afghanistan. The United States is thankful for the New Zealand Defense Force's gracious offer of the Royal New Zealand Navy ship Te' Kaha to replace the USS *Fitzgerald* after she was

involved in an unfortunate mishap in summer 2017 during the USS *Nimitz* Carrier Strike Group deployment. We commend New Zealand's commitment to planned defense capability improvements identified in their 2016 Defense White Paper. These improvements acknowledge the threats posed by the rise of China's strategic influence in the Indo-Pacific, an escalation of military spending across Southeast Asia, and increasing challenges to the rules-based international system. Military-to-Military relations and defense engagements with New Zealand remain strong. New Zealand is procuring the P–8 Poseidon—continuing the strong legacy of interoperability among Maritime Patrol and Reconnaissance Aircraft with the United States.

Singapore: Singapore remains a steadfast partner in Southeast Asia with a strong commitment to promoting a free and open Indo-Pacific. We owe Singapore our sincere gratitude for its assistance in the aftermath of the USS *John McCain* accident and timely aviation support to Hurricane Harvey relief efforts this past year. Singapore leaders believe the United States plays an indispensable role in bolstering the region's economic and security frameworks. Though not a formal treaty ally, Singapore provides us invaluable access to the strategically located entrance of the Malacca Straits and South China Sea. Singapore also hosts Littoral Combat Ships, rotational Maritime Patrol Aircraft, and Seventh Fleet's Logistics Force headquarters, while maintaining training detachments in the United States for Singapore Air Force F–15SGs, F–16C/Ds, CH–47 Chinooks, AH–64 Apache helicopters, and the Singapore Army's High Mobility Artillery Rocket System. We conduct dozens of high level and increasingly complex military exercises with Singapore each year to increase our interoperability. Furthermore, Singapore officers regularly attend United States professional military education at all levels, developing relationships that span careers. The combination of a shared outlook on regional security and prosperity, strong support for U.S. presence, and a deep and broad defense relationship enables the U.S. to promote our interests abroad and focus on shared regional challenges. Overall, we remain their defense partner of choice despite intense Chinese pandering of economic influence. USPACOM was excited to support Singapore's request for an F–22 and an F–35B static display at the 2018 Singapore Air Show in February—a great opportunity as the Government of Singapore considers a purchase of F–35B in the future.

Sri Lanka: The trajectory of United States-Sri Lanka relations continues to ascend, with Sri Lanka emerging as a significant strategic partner in the Indian Ocean region. Despite recent political turmoil, President Sirisena, elected in January 2015, remains committed to reforms and addressing Sri Lanka's human rights issues. Over the last year he continued Sri Lanka's path toward reconciliation and democracy following its multi-decade civil war. I believe it is in America's interest to continue to increase military collaboration and cooperation with Sri Lankan forces. Accordingly, USPACOM expanded bilateral defense ties, military leadership discussions, rule of law training, increased naval engagement, and focused security cooperation efforts on defense institution building in areas such as demobilizing, peacekeeping, and military professionalism. In October 2017, the USS *Nimitz* became the first United States aircraft carrier to visit Sri Lanka in over thirty years. This visit, along with granting Sri Lanka an excess United States Coast Guard cutter, underscores the deepening relationship between the United States and Sri Lanka.

Vietnam: Vietnam is currently our boldest regional partner in standing up to China's provocative behavior in the South China Sea. A series of high-level bilateral visits in 2017 helped deepen our partnership, including visits to the United States by Prime Minister Phuc in May and Defense Minister Lich in August, as well as President Trump's travel to Vietnam in November and Secretary Mattis' visit in January. In March 2018, the USS *Carl Vinson* will make an historic port visit to Da Nang, Vietnam—an indication of the significant progress in the bilateral security relationship. Last year, we transferred a 378 foot former United States Coast Guard High Endurance Cutter to the Vietnam Coast Guard. Over the next few years, we expect to continue to assist the Vietnamese to build their capacity for maritime domain awareness. In addition, we signed the Cooperative Humanitarian and Medical Storage Initiative (CHAMSI) Memorandum of Understanding in May 2017. When implemented, CHAMSI will allow USPACOM to store humanitarian assistance and disaster relief equipment in Vietnam increasing our mutual ability to train for, and respond to, natural disasters in Vietnam.

Other Key Actors

Oceania: Maintaining strategic relationships in Oceania is becoming ever more important to U.S. national security. The provisions included in the Compacts of Free Association with the Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau are important mechanisms that guide the rela-

tionships, including U.S. obligations for their defense. In return, these agreements provide assured access to the three Compact Nations in a contingency situation. They also give the U.S. authority to grant or deny access to another nation's military forces, which allows the U.S. to maintain a clear strategic line of communication across the Pacific. I am grateful to Congress for fully authorizing the 2010 Palau Compact Review Agreement in the fiscal year 2018 NDAA and would ask that Congress appropriate all required funds. The implementation of this legislation will have a significant impact on our defense relationship with Palau, and will provide a measurable advantage in our strategic posture in the Western Pacific. Continued United States commitment to defend the Compact Nations and to partner with other Pacific island countries enhances American influence and sends a strong message of reassurance throughout the region.

ASEAN: ASEAN turned 50 last year and the U.S. commemorated its 40th year of United States-ASEAN dialogue relations. The United States and ASEAN share the common principles of a rules-based order, respect for international law, and the peaceful resolution of disputes. The ten ASEAN member states, under the chairmanship of the Philippines last year and Singapore this year, continue to seek ways to improve multilateral security engagements and advance stability in the Indo-Pacific. During this past year, the United States strengthened its commitment to ASEAN with engagements at the Secretary of Defense and Presidential levels where we reached agreement on whole-of-government approaches to shared challenges in areas of maritime security and maritime domain awareness. USPACOM is committed to strengthening regional institutions such as ASEAN, ASEAN Defense Ministers' Meeting-Plus, the East Asia Summit, and the ASEAN Regional Forum. Over the course of the last year, USPACOM participated in ASEAN exercises, key leader engagements, and practical multilateral cooperation related to the spectrum of shared transnational challenges. The United States is postured to support Singapore's Chairmanship priorities for 2018 in the areas of Counterterrorism (CT), Chemical, Biological, Radiological, and Nuclear (CBRN), and Confidence Building Measures. Malaysia and the United States co-chair the ASEAN Defense Ministers Meeting (ADMM)-Plus Experts' Working Group on Humanitarian Assistance and Disaster Relief over the next 2 years. A key objective will be to support ASEAN's effort to operationalize the ASEAN Military Ready Group to multilaterally respond to natural disasters. USPACOM's approach is to promote multilateral partnerships of sub-regional ASEAN nations to strengthen a rules-based international order. This includes USPACOM support to the Indonesia-Malaysia-Philippines multilateral Cooperation Arrangements and the Cambodia-Malaysia-Thailand-Vietnam Gulf of Thailand Initiative. USPACOM looks forward to supporting the ASEAN Defense Ministers' Meeting-Plus that Singapore will host in October.

Burma (Myanmar): Our engagement with Burma's military is extremely limited and is expected to remain so considering the ongoing crisis and human rights violations by the military in the Rakhine State. The primary goal of our engagement is to encourage a professional military that operates under democratic standards of civilian control, transparency, and accountability, while also complying with international law, including international human rights law and international humanitarian law, as applicable. We underscore these points in all of our limited engagements. In addition to the humanitarian rights violations, I am also concerned about Chinese involvement in the country. Beijing is attempting to move into Burma while other countries are taking a step back, and Chinese support comes with no string attached.

China: While the United States has an economic relationship with China, in my opinion, our two nations are in clear competition for influence and control of the Indo-Pacific. As the President commented in his recent State of the Union Address, China is now our "rival," and I wholeheartedly agree with this assessment. For the last few years, I have advocated for dealing with China realistically—as it is, and not as we would wish it would be. In other words, our relationship with China should be based on candor and clear-eyed pragmatism instead of yearning and misty-eyed optimism. Some view China's actions in the East and South China Seas as opportunistic. I do not. I view Chinese actions as coordinated, methodical, and strategic. Beijing is using its military and economic power to coerce its neighbors and erode the free and open international order. As I have previously stated, I believe the Chinese are building up combat power and positional advantage in an attempt to assert de facto sovereignty over disputed maritime features and spaces in the South China Sea, where they have fundamentally altered the physical and political landscape by creating and militarizing man-made bases. While the United States has no claims in the South China Sea—and it is our policy not to take positions on sovereignty over the disputed land features—the United States resolutely

opposes the use of coercion, intimidation, threats, or force to advance claims. These differences should be resolved peacefully and consistent with international law.

This increasingly competitive environment necessitates continued mil-to-mil dialogue between the United States and China to improve understanding and reduce risk. USPACOM remains committed to a constructive, results-oriented relationship with China, so while we rightfully call out China for its aggressive behavior in some areas, we should also seek its support for shared security goals, such as the denuclearization of the Korean Peninsula. We will continue to cooperate with China where we have shared interests, such as military medicine and disaster response. USPACOM conducted numerous bilateral and multilateral engagements with China last year, and co-led the United States-China Military Maritime Consultative Agreement (MMCA) plenary and working group focused on operational safety. Encounters between our forces at sea and in the air are generally safe, but the MMCA provides a forum for continuous dialogue to identify and address safety issues when they arise.

For USPACOM, my goal remains to convince China that its best future comes from peaceful cooperation and meaningful participation in the current free and open international order. China has the potential to emerge as a net security provider for the region, but to do so, Beijing must honor its international commitments. After all, the Chinese economic miracle could not have happened without the stability that emerged from the rules-based order—an order that Beijing now seeks to undermine. But I've also been loud and clear that we will not allow the shared domains to be closed down unilaterally, so we'll cooperate where we can but remain ready to confront where we must.

Taiwan: Taiwan's open economy and its prosperous, free, and democratic society reflect the shared values between Taiwan and the United States. In accordance with our One China Policy, based on the three United States-China Joint Communiques, the United States does not maintain diplomatic relations with Taiwan. Yet, we maintain a substantive and robust relationship with the people of Taiwan based on the Taiwan Relations Act of 1979. In line with this policy, USPACOM will continue supporting Taiwan's efforts to develop a credible, resilient, and cost-effective deterrent and self-defense capability. Continued, regular arms sales and training for Taiwan's military are an important part of that policy and help ensure the preservation of democratic institutions. As the military spending and capability of the PRC grow every year, the ability of Taiwan to defend itself decreases. We must continue to help Taiwan defend itself and demonstrate United States resolve that any attempt by China to force reunification on the people of Taiwan is unacceptable. USPACOM has supported extensive security cooperation activities with Taiwan in air and missile defense, maritime security, logistic support and joint operations and training. Recent sales of anti-ballistic missiles, anti-aircraft weapons, logistics helicopters, surveillance radar, *Perry*-class Frigates, and amphibious assault vehicle (AAV–7), and electronic warfare systems continue to improve their self-defense capabilities.

Activities, Direct Reporting Units, and Mission Partners

Interagency: USPACOM collaborates with a broad group of interagency partners that bring diplomatic, economic, reconstruction and stabilization, intelligence, law enforcement, health, national security, and scientific expertise to the discussion. This allows us to address key national security issues through a whole-of-government approach, synchronizing all instruments of power. Our interagency partners help USPACOM maintain relationships with key allies and partners in this region. Our interagency collaboration has yielded success in supporting the DPRK pressure campaign; supporting humanitarian efforts in the aftermath of natural and man-made disasters; countering transnational threats, including transnational crime; preparing for potential pandemics; and, in supporting traditional military-military engagements and in non-traditional security cooperation. Our emerging and complex problems will increasingly require whole-of-government solutions, and USPACOM stands ready to support interagency-led efforts where we are needed.

Global Engagement Center (GEC): The GEC is a key USPACOM partner in facilitating interagency collaboration and coordination of efforts to counter foreign propaganda and disinformation in the Indo-Pacific. While we work to address the propaganda that terrorist organizations use to recruit new followers, we must also address the serious threat that foreign state-sponsored disinformation poses to U.S. national security. To address these threats in the information environment, it is more critical than ever that the U.S. Government has a comprehensive, whole-of-government approach to informational power. In support of this effort, USPACOM has embedded a GEC officer within the Command and is actively prioritizing information related capabilities in its planning, operations, and activities.

Security Cooperation and Capacity Building: USPACOM's Security Cooperation approach focuses on building partner readiness, reducing partner capability gaps, and building partner capacity. To effect change in these endeavors USPACOM is working to fully employ the consolidated Security Cooperation authorities in the fiscal year 2017 NDAA. The Section 333 Global Train and Equip authority, introduced in the 2017 NDAA, consolidates older train and equip authorities such as 2282 and 1004, leading to significant benefits, such as a global approach to planning and greater visibility across lines of effort. We see great promise in advancing partners' readiness and capabilities. USPACOM continues to follow a Theater Security Cooperation planning process that identifies partners' priorities, to which the various authorities can be applied in concert. Additionally, the State Department is involved in the joint planning and development of section 333 programs, and the Secretary of State must concur on any section 333 program prior to Congressional notification. USPACOM greatly appreciates the State Department's foreign policy review of our global train and equip programs.

USPACOM is also focused on improving partner-nation maritime domain awareness, which directly contributes to increased maritime security across the region. The fiscal year 2016 NDAA section 1263 "Southeast Asia Maritime Security Initiative (MSI)" is effectively enhancing maritime domain awareness and improving the maritime capacities and capabilities of partners and allies in Southeast Asia. Additionally, the Philippines, Australia, and the United States continue to discuss regional maritime security best practices through partnership workshops. These workshops facilitate whole-of-government discussions on maritime challenges that support creation of a regional maritime domain awareness network to share information between Southeast Asian partners. We need to go beyond maritime domain awareness and use an initiative like IAPSI to improve our partners' and allies' multi-domain awareness and increase their domain denial capability so that they can better protect their territory and enforce their maritime rights.

USPACOM is also grateful for the State Department's long-standing Foreign Military Financing (FMF) and International Military Education and Training (IMET) programs. FMF enables USPACOM to meet regional challenges to include border security issues, disaster response, counterterrorism and maritime security, and IMET offers long-term relationship building and sustainment.

State Partnership Program (SPP): SPP states and territories have demonstrated an impressive ability to integrate and understand their partner nations, while integrating into USPACOM's long-term strategy for the region. Not only do the National Guard states travel to their partner nations, partner nation military and civilian personnel often travel to the states for visits and engagements. This consistent and constant contact helps PACOM assess and refine our strategy and helps the U.S. maintain influence in the region.

Global Peace Operations Initiative (GPOI): Countries of the Indo-Pacific provide 31 percent of the world's uniformed peacekeepers to UN peacekeeping operations worldwide, and of these peacekeepers, 20 percent come from the 12 GPOI partners in the Indo-Pacific. These 12 countries support 13 of the 15 UN peacekeeping missions, as well as three political missions. GPOI builds the capability and capacity of our partners to deploy ready forces and is centered on providing high-quality, action-oriented, challenging scenario-based training so that peacekeepers are better prepared to implement UN Security Council Resolutions of protecting vulnerable civilians, halting conflict-related sexual violence, working to put a stop to the use of children soldiers, addressing misconduct, and trying to bring long-term peace and security to conflict torn regions. In 2018, USPACOM and Bangladesh will cohost a multinational peacekeeping exercise called SHANTI DOOT, which focuses on preparing personnel for deployment to UN peacekeeping missions. We expect participation in this exercise from 32 nations who recognize the value of working with other peacekeeping nations in a very demanding training environment. Many of our partners are meeting program goals, with six of twelve partners achieving a self-sustained indigenous training capability while the others continue to make progress toward this milestone. We continue to emphasize a "train-the-trainer" approach enabling standardization and interoperability to work within United Nations guidelines. USPACOM will continue improving partner military peacekeeping skills and operational readiness, as well as provide limited training facility refurbishment. This program not only supports our efforts to improve UN peacekeeping, it is also helping to strengthen interoperability with U.S. Forces and builds the trust required to improve interoperability in other relevant areas.

Joint Exercise Program: USPACOM's Joint Exercise Program is vital for improving the operational and warfighting readiness of assigned Pacific Theater and partner nation forces, ensuring joint force readiness for crises and contingency operations while providing a visible and tangible deterrent to aggression. This important

program is essential for advancing Combatant Commander Campaign Plan objectives including strengthening regional alliances and partnerships and deepening interoperability through combined training. Combatant Commander Exercise Engagement Training Transformation (CE2T2) program funding enables our Joint Exercise Program, helping to enhance the readiness of our assigned forward deployed forces.

Joint Interagency Task Force-West (JIATF–W): The drug trade in the Indo-Pacific threatens regional stability as drug trafficking organizations continue to utilize new supply chains and develop troubling partnerships across the globe. As USPACOM's Executive Agent for counter-narcotics activities in the AOR, JIATF–W combats drug trafficking in the region by disrupting flows of drugs and precursor chemicals that transit the region, and by hardening the theater against the expansion of transnational criminal organizations. JIATF–W continues to build partner capacity to counter illicit trafficking of narcotics in the coastal areas of Philippines, Vietnam, Indonesia, Malaysia, and Sri Lanka; and the border regions of Bangladesh and Thailand. In order to develop cooperative solutions and procedures to address the transnational criminal threats in the region, bilateral and multilateral cooperative engagements are also a focus in building the capacity of our partner nations.

The global nature of illicit trafficking means that problems that exist in this area of the world may have their start on the other side of the globe, or vice versa. For example, some of the problems we are dealing with on the Southwest border of the United States with drug trafficking start with the precursor chemicals that are being sold through licit commerce, predominantly from China; and to a lesser extent, India. Criminal entities with ties to Mexican and South American drug cartels use these licit chemicals to produce methamphetamines, cocaine, and heroin. Another drug, fentanyl-laced heroin, has been responsible for a spike in U.S. overdose deaths. Fentanyl and its numerous analogs originate almost exclusively from China. To combat these threats, the United States Government works closely with the government of the People's Republic of China in a Joint Liaison Group (JLG) on Law Enforcement Cooperation led by the Department of Justice. JIATF–W collaborates with U.S. Government interagency partners to support the JLG. To date, China has agreed to list over 100 precursor chemicals on their controlled substance list. JIATF–W works with U.S. Government partners to facilitate information sharing and interagency efforts to disrupt the opioid scourge that is so quickly claiming over 100 U.S. lives every day.

In fiscal year 2017, JIATF–W identified and tracked chemical flows resulting in the disruption of roughly 116,000 kilograms of methamphetamine precursor chemicals. JIATF–W also continues to work closely with United States and partner-nation agencies throughout the South Pacific, to include the French Armed Forces in Polynesia, as well as both Australian and New Zealand law enforcement, military, and intelligence services. With these partners, JIATF–W assists in the disruption of the lucrative drug trade in the region. In 2017, JIATF–W's efforts contributed to the interdiction of 16.6 metric tons of methamphetamine precursor chemicals, nine small vessels carrying cocaine or methamphetamine, the seizure of approximately 6.5 metric tons of cocaine, and 1.5 metric tons of methamphetamines, resulting in the removal of over 1.5 billion dollars in revenue from the trafficking organizations.

Center for Excellence in Disaster Management and Humanitarian Assistance (CFE–DM): CFE–DM increases the capacity of U.S. and partner nation military forces to respond effectively to disasters and humanitarian emergencies, as well as enhances regional civil-military coordination through its education and training programs, regional civil-military engagements, and applied research and information sharing programs. The Center trains approximately 8,000 military and civilian personnel annually, including through bilateral and multilateral exercises focused on humanitarian assistance and disaster relief. CFE–DM also trains deployable U.S. forces and foreign audiences. Regional partnerships with key civilian international humanitarian community and military responders enhance cooperation on regional disaster response and preparedness, increase civil-military collaboration, and encourage a robust collection of best practices for future relief efforts.

The Daniel K. Inouye Asia-Pacific Center for Security Studies (DKI APCSS): While DKI APCSS is no longer a Direct Reporting Unit to USPACOM, I have formally designated it as a "Mission Partner" to underscore its importance to the USPACOM mission set. DKI APCSS builds and sustains key regional partnerships, improves partner nation capacity, and enhances cooperation on regional security challenges. The Center's courses, workshops, dialogues, and alumni engagements directly support OSD–Policy and USPACOM priorities and are integrated into USPACOM's Theater Campaign Order. Focus areas include: rule-of-law based governance emphasizing civilian oversight of militaries, defense institution building, maritime security, and enhancing regional security architecture; collaborative ap-

proaches to maritime security, domain awareness, and counterterrorism; and improved capability and cooperation in HADR. DKI APCSS has major competitive advantages in its location, credibility, convening power, and alumni network. APCSS has now graduated 12,000 students—many now serve in key leadership positions in nations throughout the Indo-Pacific. Those advantages, and the Center's focus on substantive and sustainable outcomes, have broadly improved security sector governance. Specifically, this organization is leading the DOD in the implementation of UNSCR 1325 (Women, Peace, and Security) and the U.S. National Action Plan to achieve greater inclusion of women in the security sector.

Joint Enabling Capabilities Command (JECC): USPACOM continually benefits from the expertise and responsiveness the U.S. Transportation Command's (USTRANSCOM) JECC provides to Combatant Commanders world-wide. JECC recently demonstrated the ability to respond effectively to time sensitive, real-world operational requirements of USPACOM and United States Forces Korea (USFK), specifically with surge support of dynamic targeting and contingency planning efforts related to DPRK provocations. JECC's deployable support teams remain critical to USPACOM's ability to establish joint force headquarters rapidly, fulfill Global Response Force (GRF) responsibilities, and bridge joint operational requirements by providing mission-tailored, ready joint capability packages. JECC supports real-world contingencies, operational plans, and exercises, to include USPACOM's high-end Pacific Sentry series.

Logistics Support Agreements (LSAs): USPACOM continues to view LSAs as critical Theater Security Cooperation (TSC) enablers, with 16 logistics agreements in the region. We continue to actively work with eligible but as yet uncommitted partners to conclude as many of these agreements as possible, and I personally stress their importance in my engagements with partner country leadership. The logistics agreement with Japan was especially useful during the Kumamoto earthquake disaster in 2016, and the logistics agreement with the Philippines was absolutely crucial in our support to the Marawi counter-terrorism operations last year. I often share these success stories with our partners and ensure they understand that the ability of U.S. forces to provide support during a crisis or disaster is limited without an LSA in place.

Pacific Area Senior Officer Logistics Seminar (PASOLS): PASOLS is an annual forum that brings together senior logisticians from 30 countries in the Indo-Pacific. The goal is to strengthen regional cooperation, improve interoperability, and develop partner capacity to cooperatively address regional challenges. The Republic of Korea hosted PASOLS 46 in September 2017. PASOLS is our most important annual logistics engagement event.

CONCLUSION

United States interests in the Indo-Pacific are real and enduring, while the growing challenges to our interests are daunting and cannot be overstated. In order to deter potential adversaries in the Indo-Pacific, America must continue to invest in critical capabilities, build a force posture that decreases our vulnerabilities and increases our resiliency, and reassure our allies and partners. Simultaneously, we must also encourage our allies and partners to be full and cooperative partners in their own defense and the defense of the free and open international order. America's resolve is strong, and it is imperative we continue to show our resolve and commitment to the region in the years to come. I ask this committee to continue support for future capabilities that maintain our edge and prevent would-be challengers from gaining the upper hand.

Thank you for your enduring support to the USPACOM team and our families who live and work in the Indo-Pacific—a region critical to America's future.

[The prepared statement of General Vincent Brooks follows:]

PREPARED STATEMENT BY GENERAL VINCENT K. BROOKS

INTRODUCTION

Chairman McCain, Ranking Member Reed, and distinguished members of the Senate Armed Services Committee, thank you for your continued support to our efforts. I sincerely regret that I am unable, due to the ongoing mission requirements here in Korea, to appear before you in person. I am grateful to Admiral Harry Harris, my "battle buddy" of many years for shouldering the testimony load by himself.

For nearly 2 years, I have had the distinct honor to command the men and women of the United Nations Command (UNC), the Republic of Korea (ROK) and United States Combined Forces Command (CFC), and the United States Forces Korea

(USFK). These extraordinary soldiers, sailors, airmen, marines and civilians—Korean and American, and representatives of the original 17 UNC Sending States from the Korean War—remain forward-deployed, devoted to deterrence, and postured to defend the Republic of Korea and its citizens every day. I could not be prouder of their efforts.

We could not accomplish our mission in the Republic of Korea without the steadfast Congressional support we receive each year. We are dedicated to maintaining strong relationships with our counterparts on Capitol Hill and are grateful for the opportunity to host Congressional delegations to visit our facilities, discuss our challenges, and meet with senior officials to engage on various issues to strengthen our posture and defend our allies. Your unwavering dedication to the Command enables us to foster the cohesion in Northeast Asia necessary for the Alliance to act as the guarantor of peace and prosperity on the Korean Peninsula. Thank you for your commitment to the maximum pressure campaign, and the implementation of United Nations (UN) Security Council Resolutions (UNSCR), all of which are vital to the international efforts to apply the diplomatic and economic pressure to further isolate the Kim regime while finding the way toward complete, irreversible, verifiable denuclearization.

These diplomatic and economic efforts rest on the foundation of a credible, ready military capability. Our effort to maintain a high state of military readiness is coupled with developing and strengthening relationships within the United States-ROK Alliance, regionally with our allies and partners, and globally with UNC Sending States to ensure that we have a structure of relationships tailor-made to adaptively respond to the myriad of potential security challenges in the region. I am confident that our combined and unified team is prepared to address the complex and dynamic challenges we may potentially face. The ROK–United States Alliance—although increasingly tested by North Korea's military advancements—remains ironclad. A spirit of goodwill between the United States and the Republic of Korea as enduring allies undergirds our day-to-day interactions. Here in Korea, we (ROK and United States) go together.

ACTIVITIES ACROSS THE THREE COMMANDS

The three commands—UNC, CFC, and USFK—made improvements in numerous areas in the past year, which significantly increased our readiness to fulfill the unique missions of each command. UNC is the home for international commitments to the Korean Peninsula. CFC is the heart of the United States-ROK Alliance. USFK is living proof of America's enduring commitment to the defense of South Korea. Together the three Commands provide the collective capabilities necessary to enhance the security of the ROK and its citizens.

Throughout the past year, UNC harnessed efforts to increase its vitality and relevance as the home for international commitments to the Korean Peninsula. While steadfastly maintaining the Armistice, we actively sought to expand our engagements with the 17 United Nations Command Sending States and our like-minded international partners. We continued to identify and enhance intelligence sharing, interoperability and unified training and planning opportunities. UNC Sending States provided liaison officers to augment the 2017 UNC Military Armistice Commission (MAC) Secretariat mission including advise and assist visits, inspections and investigations, observations, Armistice education, and DMZ access control. Over the last 2 years, other non-U.S. UNC Sending States have shared their perspectives and robustly supported exercises on the Peninsula by contributing a total of 755 service members.

Efforts are advancing for the possible development of Visiting Forces Agreements (VFA) for UNC Sending States. We are also striving to establish greater end-to-end awareness with UNCRear Headquarters in Japan. Corollary efforts are being made to discuss the critical role of bases in and agreements with Japan. During 2017, UNC–Rear hosted a significant increase in multilateral engagements, including port calls, aircraft visits, and visits from UNC Sending States and other international partners. These notable activities serve to reinforce UNC's organic, multinational framework for international peace and security on the Peninsula.

CFC is the heart of the United States-ROK Alliance (which, for the ROK, is the cornerstone of their foreign policy) and its primary warfighting command. Over the past year, CFC strived for an increase in naval, aerial, and special operations exercises, which highlighted the strength and readiness of the combined force. These bilateral efforts demonstrated that we stand ready to defend against all adversaries and support diplomatic, economic, and informational efforts of our two governments. CFC increased its interactions with multilateral partners through its robust exercise program. The Command also refined its Operations Plans (OPLAN); made signifi-

cant advances in ballistic missile defense (BMD); closed early warning gaps; and advanced theater command, control, communications, computers and intelligence (C4I) capabilities. CFC continues to make progress in countering-weapons of mass destruction (CWMD), cyber, and joint information environment efforts.

As living proof of America's commitment to the defense of the ROK, United States Forces Korea also made advances in readiness and capabilities. Based upon the Alliance decision this past year, the Command successfully deployed the Terminal High Altitude Area Defense (THAAD) BMD system to South Korea. This advanced system is the most effective BMD platform in the world and an important capability that—when paired with existing systems like Patriot—reinforces the BMD architecture defending millions of ROK citizens, much of South Korea's critical infrastructure, as well as United States Forces and assets in the ROK. Action by the U.S. Congress improved our ability to logically integrate Patriot and THAAD systems so the "right" interceptor, not just the "best" interceptor defeats any incoming threats. Our ability to intercept inbound North Korean ballistic missiles threatening the areas defended by THAAD and Patriot have been remarkably enhanced.

USFK also increased several critical munition stockpiles essential for the defense of the ROK. This major effort was accomplished with the tireless assistance of the military Departments, in close partnership. The Command continued to receive and integrate rotational brigades, which participated in numerous combined exercises with their ROK counterparts. Last year, the Command also relocated the United States Eighth Army from Yongsan Garrison, within the capital city of Seoul, to Camp Humphreys, approximately 50 miles to the south and well outside the Greater Seoul Metropolitan Area (GSMA). This is a milestone in USFK's efforts to return Yongsan Garrison to the ROK Government and a move that reflects the enduring nature of our commitment.

The Command also continued to emphasize a robust and challenging exercise program that serves as a cornerstone of our readiness. We participated in bilateral exercises ULCHI Freedom Guardian (summer) and Key Resolve (spring), the two largest command post exercises supported by the Department of Defense (DOD). U.S. Eighth Army executed two Non-combatant Evacuation Operations (NEO) exercises, named Focused Passage and Courageous Channel, in the spring and in the summer, respectively, which improved NEO readiness and better integrated our plans and actions with United States Embassy Seoul, United States Embassy Tokyo, United States Pacific Command (USPACOM) and United States Transportation Command (USTRANSCOM). United States Special Operations Command Korea (SOCKOR) executed nine joint combined exercise training events that focused on working with their ROK Special Operations counterparts. USTRANSCOM, U.S. Cyber Command (USCYBERCOM), and U.S. Strategic Command (USSTRATCOM) remain key partners who have enhanced their readiness to support contingency operations in Korea over the last year, and I remain grateful for their devoted support.

In November, the USS *Ronald Reagan,* USS *Nimitz,* and USS *Theodore Roosevelt* carrier strike groups conducted a tri-carrier strike force exercise in U.S. Seventh Fleet's area of operation, the first of its kind in ten years. In a truly combined and joint fashion, CFC conducted two maritime counter-special operations forces (MCSOF) exercises where combined Army, Air Force, and Navy aviation assets operated under the tactical control of ROK Aegis ships and United States Navy strike groups to rehearse preventing infiltration along South Korea's maritime flanks. The U.S. Seventh Air Force-hosted Vigilant Ace exercise brought state-of-the-art capabilities to the Peninsula by incorporating F–22s and F–35s into our combined air operations for the first time. In a show of close cooperation between United States and ROK military forces, we conducted numerous multilateral shows of force utilizing B–1 bombers and our newest 5th Generation aircraft, as well as combined live fire exercises utilizing the United States Army Tactical Missile System (ATACMS) and the ROK Hyunmoo-II Missile.

We also cooperated with our ROK ally through other formal and informal frameworks. In October 2017, the ROK Joint Chiefs of Staff hosted the annual Military Committee Meeting (MCM) and Security Consultative Meeting (SCM) between the United States Secretary of Defense and the ROK Minister of Defense. The Foreign Affairs and Defense agencies of both countries also approved a framework for the Extended Deterrence Strategy and Consultation Group (EDSCG), which now works to strengthen the Alliance's deterrence posture against North Korean nuclear and missile threats. The second EDSCG meeting convened this past January, with increased emphasis on Alliance coordination of defense activities and strategic communications. Informal processes were also continuously at play through the conduct of our bilateral command post exercises and the recurrent engagements between members of our Command and various ROK officials.

STRATEGIC ENVIRONMENT

North Korea. North Korea remains a significant threat to security and stability in Northeast Asia and beyond. The past year was marked by continued North Korean provocations, threats, and actions that have raised tensions on the Korean Peninsula and across the globe. The Kim Jong-un regime continues to hold security and stability in the Indo-Pacific at risk with its conventional arms and further development of WMD and other asymmetric capabilities capable of posing a direct threat to the United States Homeland. Their strategy is aimed at fracturing consensus among the key regional actors by carefully orchestrating the timing and methods of their provocative actions and messaging.

In 2017 alone, North Korea launched three ballistic ICBMs and conducted its sixth nuclear test along with 16 other missile launch events (two of which overflew Japan). North Korea's missiles threaten not only South Korea, but an increasing number of our allies. Pyongyang overtly threatens the safety of citizens in Australia, Japan, the United Kingdom, the United States, specifically calling out Guam, and South Korea. In addition, the Kim regime deployed a chemical agent in Malaysia to assassinate Kim Jong-un's half-brother Kim Jong Nam in the sovereign territory of another nation. While the sum of these unlawful activities and developments may have extended the reach of North Korea's threats, the international community has confronted the Kim Jong-un regime in months past with unprecedented diplomatic and economic pressure.

Though the expanding range of North Korea's ballistic missiles is concerning, a serious, credible threat to 25 million ROK citizens and approximately 150,000 United States citizens living in the GSMA is also posed from its long range artillery. Nearly 250,000 United States citizens live in South Korea, with approximately 150,000 Americans in the GSMA. North Korea has deployed at least three artillery systems capable of ranging targets in the GSMA with virtually no warning. Conservative predictions of a likely attack scenario anticipate an initial artillery barrage focused on military targets, which would result in significant casualties, while a larger attack targeting civilians would yield several thousand casualties with the potential to affect millions of South Korean citizens, not to mention hundreds of thousands of United States citizens and nationals of other countries within the first 24 hours. North Korea also possesses the world's largest special operations force, the fourth largest standing army, and a long-standing chemical weapons program with the capability to produce nerve, blister, blood and choking agents. Moreover, North Korea could employ chemical weapons agents by modifying a variety of conventional munitions, including artillery and ballistic missiles. Considering its known research efforts, physical infrastructure, and weapons industry, the North also has a potential capability for biological warfare.

Kim Jong-un's regime continues to expand its offensive cyber capabilities. In May 2017, ransomware attributed to North Korea attacked computer systems worldwide. This came on the heels of cyber operations that allowed the country to steal more than $80 million from international financial systems in 2016. According to reports, North Korea has more than 6,000 hackers, whose improving capabilities provide the regime a financial pipeline to support its weapons programs and a means to collect sensitive information from other parties and disrupt infrastructure in other countries.

While North Korea continued its pattern of destabilizing activities, cooperation and consensus among concerned partners and the greater international community increased. Just this last year, the United Nations Security Council championed efforts to further isolate the North, unanimously adopting Resolutions (UNSCRs) 2345, 2356, 2371, 2375, and 2397 to denounce its unlawful nuclear and ballistic missile tests, condemn its persistent defiance of the will of the international community and violations of international law, and further sanction the Kim regime. The full and strict implementation of UN sanctions will bring about greater pressure on North Korea.

The year came to an end with a 73-day hiatus from North Korean provocations, interrupted by the 29 November (Korea date—and 28 November in Washington) ballistic missile launch that achieved the highest apogee and longest flight time yet. In the time since that event to the submission of this report, we have experienced another hiatus from provocations. This is worthy of note, given the rapid pace of testing that characterized 2017.

The steady application of focused international pressure may be having an effect, given the recent signs of rapprochement between North and South Korea. Both sides cooperated at the Pyeongchang Winter Olympics hosted by South Korea and have pursued cultural exchanges in conjunction with athletic engagements. In addition, they agreed to conduct military engagement around the re-established border

hotline and explore other senior official meetings in order to improve relationships between the countries and ease tensions on the Korea Peninsula. We continue to observe and closely coordinate with our ROK partners during these recent developments. The ROK Government believes that dialogue must be added to pressure in order to move toward denuclearization. My frequent encounters with the senior leadership of the ROK Government make this clear. South Korea will respond to North Korea's sending an Envoy and a representative to the ROK during the Pyeongchang Olympics, while conveying a unified Alliance demand for complete, verifiable, irreversible denuclearization of North Korea.

Republic of Korea. Strong Alliance military cooperation persisted through South Korea's political transition in 2017, as the ROK continued to demonstrate commitment to increase its primary military role of conventional deterrence by developing and procuring modern, interoperable capabilities. The ROK Government continues to increase spending on defense (currently 2.7 percent of GDP), and ROK President Moon Jae-in committed to further raise ROK defense spending by 0.1 percent of GDP each year through 2022. As a comparison, ROK defense spending as a proportion of GDP is higher than all NATO members save the United States. The ROK Government also contributes significant funds to the United States military presence in South Korea. In 2017, the Special Measures Agreement (SMA) provided approximately $830 million in support of USFK activities that would have otherwise been paid by the United States Treasury, and the ROK Government approved a one percent increase to the SMA for 2018. South Korea is also funding 92 percent of the total costs for the expansion, construction and relocation effort into United States Army Garrison Humphreys in the city of Pyeongtaek. In addition to strong fiscal support from the ROK Government, the South Korean public is strongly in favor of the Alliance, demonstrated by a high United States favorability rating that today ranges between 75 and 85 percent.

Seoul is also investing heavily in defense modernization. The United States and South Korea currently manage over 650 foreign military sales cases, valued at over $26 billion. Our Korean ally has committed to acquire a number of military capabilities critical to our Alliance, particularly in the areas of intelligence, surveillance and reconnaissance (ISR), missile defense, air superiority, precision guided munitions, and maritime security. Some examples of recent acquisitions include Global Hawk unmanned surveillance aircraft, Patriot PAC–3 upgrades, Guidance Enhanced Missiles (GEM–T), Harpoon missiles, Aegis KDX–III destroyers, AH–64E Apache attack helicopters, upgrades of KF–16s, and F–35A Joint Strike Fighters. These capabilities and commitments are designed to greatly enhance the warfighting readiness of the ROK–United States Alliance and bring about many of the conditions required for successful transition of wartime operational control (OPCON) to South Korea. Additionally, South Korea recently began BMD modernization. Once completed, ROK Patriot BMD forces will have greater effectiveness against theater ballistic missiles. In concert with these advances in ROK defense modernization, we are striving for ever-greater transparency within the Alliance regarding these maturing capabilities to ensure there is a common understanding of all of the tools that will be available to the CFC in wartime. It is notable that South Korea not only invests in advanced United States technologies in a large way, but they also develop their own advanced capabilities as a sophisticated, technologically advanced ally.

Beyond the Korean Peninsula, South Korea contributes to international security through peacekeeping operations, stabilization and reconstruction efforts, regional security cooperation initiatives, and humanitarian assistance and disaster relief. Seoul has also taken important steps to increase its cooperation with Japan by bolstering multilateral cooperation, particularly in the areas of information-sharing and BMD. There is sufficient military willingness to cooperate more with Japan both trilaterally and multilaterally; however, the deep social and political issues that mark the history of the relationship between the two countries will determine the pace of progress toward this collective end.

China. China remains a pivotal player with unique global reach and is one of the region's most influential actors. While it once held a reputation for being as close to North Korea as "lips and teeth," Beijing has expressed frustration with the North's repeated provocations, and supported multilateral sanctions against the regime. However, China also retaliated economically against Seoul in protest of its deployment of the THAAD BMD system on the Peninsula. One of the most impacted sectors was ROK tourism, with losses estimated to exceed $6.5 billion. During President Xi and President Moon's summit in Beijing in December, the deployment of THAAD to the Peninsula and China's pressure on the South continued to linger as an issue between the two nations. China and South Korea pledged to improve bilateral relations and bolster cooperation. I find that this has been partially acted upon,

and there are still limits to the degree of cooperation and relief between South Korea and China.

The United States is looking closely at how China approaches its relations with North Korea, especially regarding implementation of recent UNSCRs. There are open source reports of recent Chinese efforts to uphold sanctions which indicate China's trade with the North has fallen since strengthened international sanctions came into effect in September 2017 and January 2018. Such a drop in trade may be attributable to decreases in North Korean exports of coal, iron ore, lead ore, and seafood to China. It is evident that the relationship between China and North Korea is a strained one, perhaps at an historic low point. China's continued enforcement of sanctions will be vital to achieving the "biting" effect required to cause the North Korean regime to reconsider its strategic weapons development.

Russia. Russia remains opposed to North Korea's persistent provocations and has implemented some sanctions against Pyongyang. However, as it observes international cooperation, it also adopts the opportunist role in the Indo-Pacific that it takes elsewhere in the world. Recent signaling indicates that Moscow may attempt to continue to grow its role on the Korean Peninsula. In July 2017, Russia joined China in endorsing a "freeze-for-freeze" initiative that calls for North Korea to refrain from missile and nuclear testing and the United States and South Korea to halt large-scale bilateral military exercises. In December 2017, Russia also expressed a willingness to mediate talks between the United States and North Korea. We find Russia's actions to be based on self-interest and must always remain alert to their inclination to "spoil" progress being made around them.

Japan. In light of North Korean provocations, Japanese Prime Minister Shinzo Abe has sought to bolster his country's defensive posture and allow Japan to play a larger role in the United States-Japan alliance. Along these lines, Tokyo is pursuing its largest-ever defense budget for FY 2018, with funds earmarked for introducing the United States military's Aegis Ashore land-based missile interceptor system to protect against North Korean missiles. Tokyo also sought to advance substantive cooperation with Seoul in areas where they have complementary interests. Japan's recent attendance at the Vancouver Foreign Ministers Meeting on Security and Stability on the Korean Peninsula and Prime Minister Abe's appearance at the Winter Olympics in South Korea are positive signals between South Korea and Japan. Japan and South Korea remain in a complex relationship, which I assess may improve in 2018 if internal domestic politics provide more room for cooperation and constructive engagement. UNC, which maintains a headquarters and seven bases in Japan, and USFK remain in unprecedented closeness to the Japan Self Defense Forces, and to United States Forces Japan, through engagements in South Korea and in Japan. The trajectory is measured, yet positive.

LOOKING TO THE FUTURE

Innovation. USFK endeavors to become a hub for burgeoning technologies, innovative thinking, and the application of fresh strategic capabilities. With the addition of ROK and UNC partner capabilities, we seek innovative approaches to solve our challenges in this highly dynamic environment. I have directed the creation of a small team—the Emerging Capabilities and Innovative Effects Division—to connect and apply the innovation that is emerging from across the DOD to the Alliance's opportunities and challenges on the Korean Peninsula.

Initial efforts are centered on the integrated defense of the GSMA. The ability to destroy North Korean artillery and ballistic missiles at their firing positions, coupled with the ability to intercept and protect the South Korean capital from these threats, are options we seek to continually develop and employ with our ROK partners. We also look to develop a robust chemical, biological, radiological, nuclear, and explosive integrated early warning system with our ROK counterparts in order to provide immediate detection and public warning while informing decision making at the highest levels of the two governments. When examining many of the military challenges we face, there are opportunities for path-changing innovation. Through this work, USFK established unique partnerships with defense, government, industry, and academic organizations in the United States, South Korea and UNC Sending States. Recent Command engagements with Defense Digital Service (DDS), Defense Innovation Unit—Experimental (DIUx), Defense Threat Reduction Agency (DTRA), U.S. Army Research, Development, and Engineering Command (RDECOM), Defense Advanced Research Projects Agency (DARPA), and Massachusetts Institute of Technology-Lincoln Laboratory have enabled the Command to begin to sharpen its focus and spur innovation with our partners.

Increased multilateral cooperation. Nations in the Indo-Pacific and beyond are increasingly concerned about the North Korean threat, and many have dem-

onstrated their willingness to work with South Korea, Japan, the United States, and like-minded partners to more rigorously implement UNSCRs that impose sanctions on the Kim regime. Our efforts extend to integrating UNC Sending States and FVEY partners into combined exercises and planning efforts in the Korean theater of operations. We are grateful to the Department of State for their successful sponsorship of the January 2018 Vancouver Foreign Ministers Meeting on Security and Stability on the Korean Peninsula, an idea that emerged from monthly meetings with the Ambassadors of the 17 United Nations Sending States of the Korean War. We will stand ready to enable any additional opportunities that may arise from this important international gathering.

By reinforcing our multilateral efforts, we will work toward a coherent, collective response to our common security challenges and find ways to enhance interoperability and improve our collective defense capabilities. It is paramount that we continue to improve ballistic missile defenses, facilitate the sharing of information, and conduct exercises to maintain a common operational framework. We will bolster maritime interdiction operations, humanitarian assistance and disaster response exercises, and anti-submarine warfare capabilities.

Improved readiness. USFK's efforts to improve readiness on the Peninsula are a two-pronged approach aimed at ensuring we conduct robust combined and joint exercise cycles and continue whole scale integration efforts throughout each subordinate component command. We will execute the two major theater-level command post exercises and one theater-level field training exercise each year. These exercises are essential to strengthen the Alliance, deter North Korean aggression, ensure the UNC's ability to maintain the Armistice, improve force readiness and interoperability, and integrate UNC Sending State (multinational) forces and capabilities into theater defense operations. Maintaining and further developing these exercises in the future also provides the ability to execute certification requirements for the transfer of wartime OPCON, while concurrently assessing our combined warfighting readiness.

The Combined Forces Command is also making great progress toward becoming more united at the component level. Cooperation between the Commander, Naval Forces Korea (CNFK) and the Commander of the ROK Fleet (CRF) hit an inflection point in February 2017 with the collocation of their headquarters (HQ) on the ROK Fleet base in Busan. This has dramatically increased cooperation, interoperability, and warfighting synchronization and effectiveness. Current initiatives are underway at U.S. Seventh Air Force to streamline the integration of combined component-level HQ staffs to operate together on a routine basis. SOCKOR is becoming more combined with their ROK counterparts through a recent increase in engagements, establishment of a co-located staff element within the ROK Special Operations Forces Headquarters, and a planned feasibility assessment for the collocation of the SOCKOR HQ with ROK Special Warfare Command.

Yongsan Relocation Plan (YRP). Our commitment to the timely completion of the Yongsan Relocation Plan (YRP) and Land Partnership Plan (LPP) remains one of my top priorities. USFK unit relocation and the closing and relocating of camps continue to progress favorably. Through the consolidation of U.S. Forces and positioning troops closer to air and sea installations south of Seoul, the relocation program enhances United States-ROK Alliance readiness, and improves USFK's capacity to respond to future defense initiatives. 2017 saw the relocation of the U.S. Eighth Army Headquarters to U.S. Army Garrison—Humphreys. Relocation of most remaining units to that garrison—USFK, UNC, United States Marine Forces Korea and the 2nd Infantry Division Headquarters—is slated for completion in 2018. We continue to cooperate closely with the ROK Government to enable seamless progress of the remaining USFK base relocations, and to consult closely on camp return issues through the Joint Environmental Assessment Procedure (JEAP).

Conditions-based OPCON Transition Plan (COTP). The Alliance has made significant progress in setting the conditions for the future combined command. The command will continue to operate under the bilateral guidance of the Presidents of the United States and South Korea or their delegates. After this transition, a United States general officer will change roles to serve as the deputy commander of the future combined command and remain as commander of the UNC and USFK. U.S. Forces will continue to operate under U.S. national authorities. The Alliance is prepared to accelerate OPCON transition as South Korea continues to develop and acquire the critical capabilities required for the Alliance's wartime success. The OPCON transition process must proceed in a way that strengthens deterrence against North Korea and enhances our combined capabilities.

The ROK Minister of Defense and U.S. Secretary of Defense pledged in October 2017 to make joint efforts to implement the commitment by President Trump and President Moon in June 2017 to enable the expeditious conditions-based transfer of

wartime OPCON. The Minister of Defense emphasized South Korea's commitment to complete the preparations necessary to exercise OPCON in accordance with the signed COTP. The draft organization of the future combined command was discussed, and the Ministers decided to continue to refine the concept through combined exercises and certifications. They also committed to develop Alliance guiding principles for the further enhancement of combined defense posture post-OPCON transition. The two sides decided to reexamine the implementation plan for OPCON transition, such as the Alliance capability acquisition plan; Terms of Reference—Relationship (TOR–R) and Operation Plan; and combined exercises and certification plan. They also agreed to jointly review and update COTP by the 2018 SCM.

CRITICAL CAPABILITIES

Intelligence, surveillance, and reconnaissance (ISR). CFC and USFK will seek multi-discipline, persistent ISR capability and associated exploitation support to extend the warning time available to the Commander. Deep-look ISR and moving target indicators provide the ability to continuously track indications and warnings (I&W) targets over longer durations. As North Korea grows its threat to the Homelands of the United States and our allies, it is essential to have the fullest possible picture of activities in all domains above the Military Demarcation Line. While there are restrictions, both generally under international law and under the Armistice regime, on using ISR assets outside of ROK territory or in international airspace and waters, an increase in assets available and a broadening of the spectrum of collection would be helpful to improve our I&W, and to better sense opportunities in our competition short of war.

Command, control, communications, computers, and intelligence (C4I). It is important that we strive for C4I interoperability with our Korean ally, in areas including tactical communications and blue-force situational awareness and seek system survivability and robustness to enable modernized information sharing. Policies, agreements, and technologies must lean toward enabling bi-national and multi-national information sharing. We rely on military and commercial satellite capacity for mission command to provide assured communications and situational awareness down to the individual soldier. Advanced C4I capabilities that are compatible with the available frequency spectrum in Korea, able to penetrate underground facilities and capable of transmitting high bandwidth imagery and data via satellite are essential to our mission set.

Ballistic missile defense (BMD). We have made significant strides in BMD capability this year with the commitment to thicken the layers of missile defense through THAAD and Patriot system modernization. Increasing interoperability with ROK systems is a key part of improving Alliance missile defense, including program upgrades to the ROK Patriot system and procurement of PAC–3 interceptors. As North Korea continues to improve its missile forces, the ROK–United States Alliance must also continue to expand its BMD capabilities.

Countering-WMD (CWMD). North Korea continually demonstrates its commitment to develop its chemical, biological and nuclear weapons programs, so it is imperative that we work diligently to close any gaps in our CWMD capabilities that would put ROK–United States forces, civilian safety and our objectives at risk. We must ensure we have sufficient integrated early warning, protection, decontamination capabilities, and medical countermeasures and that our systems provide a shared picture of the combined operational environment.

Critical munitions. Thanks in large part to our U.S. military service partners, we made significant progress during the past year to increase our stocks of select munitions that are critical to early phases of conflict. However, there is still work to be done. Together with our ROK counterparts, we continue to identify ways to close these capability gaps through various procurement channels. The long-term U.S. solution is for the services to develop munitions requirements, fund, and procure munitions identified through the Joint Capabilities Integration Development System (JCIDS) and Munitions Requirements Process (MRP) to supply munitions that are not available from other sources.

CLOSING

Through the difficult challenges of the past year, UNC, CFC, and USFK have steadfastly defended United States security interests on the Korean Peninsula, and sought to maintain stability in Northeast Asia. The United States military presence on the Korean Peninsula and the strength of the United States-ROK Alliance are critical to deterring future aggression, and posturing for potential conflict. As Commander, I can report that over the past year the Command improved readiness; pursued innovative solutions to our challenges; and filled capability shortfalls that less-

en North Korea's ability to hold the United States and South Korea at risk. By making thoughtful resource decisions, developing Alliance initiatives, and reinforcing relationships with our allies and partners, we will continue to shape our environment to advance security and stability on the Korean Peninsula. Thanks to the Committee for your support, and for the opportunity to communicate my assessment of our current posture. I am honored to have the privilege of leading American soldiers, sailors, airmen, and marines; our Government civilians; and their counterparts from the Republic of Korea. Our Alliance remains strong through daily trustbuilding interactions that are enabled by your support. We will remain ready to "fight tonight" while also ensuring we take every possible route to prevent war and accomplish U.S. and ROK strategic objectives.

"Katchi Kap-shi-da!" We Go Together!

Senator INHOFE. Well, thank you very much. It was an excellent opening statement.

You know, since we started the NDS as being the two-three approach, the two, of course, is China and Russia, and the changes, I've commented in my opening statement that, when Senator Ernst and Senator Sullivan and Senator Rounds and I were over there, and with you and then on through that area, it was very disturbing. During the trip, we came to the conclusion that our allies are worried about the pace of China, which is more evident, more visible than anything that we're doing.

A key topic of discussion was China's built-up militarization in the South China Sea. In fact, over 3,200 acres have now been—they call it "reclamation." I don't call it "reclamation," because there's nothing to reclaim. It's creation of new land. They don't have the legal authority to do the things they're doing, but they're doing them anyway. That's gotten everyone's attention. These reclaimed lands are up to over 3,000 acres now, and they have a shocking amount of military equipment there, and it's very disturbing. It's increased its military activities in the Sea to bolster its territorial claims there, despite U.S. and international efforts to maintain freedom of navigation. That's a serious problem.

If you look at the location of these islands, it's right in the navigation province, creating problems, potentially, for us. It's also increased the pace of the military activities. The Trump administration's National Defense Strategy, as I mentioned, places an emphasis on improving our ability to expand the competitive space against China.

Now, the thing that disturbs us—and I think I speak for all five of us who were over there just two weeks ago—is the—our allies are actually having a hard time choosing between China and us because of the visibility of what they're doing. I'm talking about allies that I mentioned in my opening statement. We talked to the Philippines, Taiwan, South Korea, Japan, and they all seem to be divided between the leadership—their Secretaries that—or Ministers of Defense and their Foreign Ministers are each taking a different side. So, it was—that was an awakening to us to see that happen.

So, starting with China. I'll just ask you the question. You've covered it pretty well. You talked about, "China's intent is clear." Well, let me ask you. Do you consider China's buildup in that area as a direct threat to the United States and its allies?

Admiral HARRIS. Senator, I do believe that China's actions and what they've done in the South China Sea does threaten our position there. I think they're reaching a point of position on advantage

in the South China Sea. If it comes to a conflict, we'll have to deal with that.

Senator INHOFE. Yeah.

Admiral HARRIS. I do believe that China gains when we don't call them out publicly. It's important that we maintain that public criticism of China.

Now, I've talked, in the past, that we should compliment China and thank them for the things that they are doing in the international space that's good for the order, things like counter-piracy operations, their work to help the effort to remove chemical weapons from Syria, and on and on. These are positive things. Most recently, their work in the U.N. sanctions regime against North Korea. We should thank them for that, and appreciate that.

Senator INHOFE. Yeah. I understand that.

Admiral HARRIS. But, at the same time, we should hold them accountable for the things they're doing that are provocative and aggressive to their neighbors and to us. We do have to counter their perception, as I mentioned in my comments, that the U.S. is either a declining power, which I don't believe, or a disinterested power, which I also don't believe. But, that is the perception, and we must work to counter that, in my opinion.

Senator INHOFE. Well, I know that's the perception, because we were there, and we heard that articulated, and there is no doubt what their feelings are.

Just before I run out of time, I want to mention North Korea, and, of course, Russia is the threat. But, North Korea is something that is a changing scene. We had a hearing, last week in this chamber, of our intel. We had the DIA [Defense Intelligence Agency] and the CIA [Central Intelligence Agency] here, and we talked about this in some depth. I just disagreed with them. I've never disagreed with Dan Coats in my life until that—until last week. But, when he—asked the question, "Do you really think that this recent communication from Un to our President was one that we cannot depend on having any results?" They both said, "No, we've gone through this drill before." To me, it's different this time. We had a very direct, harsh response from our President to Kim Jong-un when he made the statement about having the button, "I'll press it," and all of that. It was immediately after that response that North Korea communicated with South Korea and said, "We want to join in now with the Winter Olympics," and then, of course, they came out with this statement. I can't help but think——

Look, his dad, Un's dad, never had the bargaining chip that he has now. The fact that, November the 28th, that they sent something over that can reach the United States, that's something that he can use. People argue, "Well, it didn't have a payload, it wouldn't have performed that well with a payload." That doesn't give me any comfort at all. They say it doesn't have the reentry capability. But, you know, the fact that they can do that, puts him in a position, I think, to be a negotiator. Is there anything further concerning the threat from Un that you want to share before I turn this over?

Admiral HARRIS. Sir, I'll just say that I do believe that the strength of the pressure campaign plan was part—a big part of bringing North Korea to the table, to the offer of a summit.

Senator INHOFE. I——

Admiral HARRIS. Without the strength of the pressure campaign plan and its effectiveness so far, I don't think we would be where we are.

Senator INHOFE. I appreciate that very much.

Senator Reed.

Senator REED. Well, thank you very much, Mr. Chairman.

Thank you, Admiral Harris, not only for your testimony, but for your service, particularly, as you've indicated, this might be your final meeting. You've served the Navy and the Nation very well. Thank you, sir.

Admiral HARRIS. Final meeting with this committee, sir.

Senator REED. With this committee, of course. There are other committees, but let them——

Admiral HARRIS. Downrange. Yes, sir.

Senator REED. Yes, sir.

North Korea. Part of our approach must be multilateral with all of our allies, including South Korea and Japan. Any insights on Japanese participation? The South Koreans, of course, initiated these talks, and seem to be engaged—President Moon. But, President Abe has his own problems in Japan, but, also, they—are they onboard? Are they going to be 100 percent with us on this?

Admiral HARRIS. I believe they will be, sir. I think that Japan is clearly an interested party in what happens on the Korean Peninsula and this summit that's coming up. But, I believe that Japan will be supportive of the outcome. They share our concerns about the trustworthiness of North Korea. So, you know, we—in the past, in talking about other countries and stuff, you know, we tend to use the term "trust but verify." In this case, I think it's "distrust and verify." But, I believe that we are—that Japan will be with us as we go forward, here.

Senator REED. And, you know, perhaps being overly optimistic, but if there is a—some type of an agreement, that would require years and years of intense verification and constant surveillance. So, we would be making a huge but, I think, appropriate investment in terms of following up the—any type of agreement with the kind of oversight and nonproliferation activities that would be essential.

Admiral HARRIS. I agree with you, Senator. I do believe that our position will remain a complete, verifiable denuclearization, irreversible denuclearization of the Peninsula, as we go into this. I think we can't be overly optimistic on outcomes. We'll just have to see where it goes, if and when we have the summit.

Senator REED. Just two other questions. I presume, and I'll ask you to comment, that this would, at its best, be a stepwise process, that the likelihood of a total, complete agreement in one or two meetings would—is doubtful, that progress would be slow, that it would be a—concessions followed further concessions, et cetera. Is that your view, too?

Admiral HARRIS. You know, I don't know, Senator. We've never been in a position where the President, our President, has met with a leader of North Korea, ever, and so, I don't have a way to predict the future. I just think that we have to go into this, eyes wide open.

Senator REED. And just so, with respect to North Korea, finally, a great deal of the pressure has been generated economically by the Chinese participation. It's actually—they're getting better and better, in terms of curtailing trade with North Korea. Do you sense any kind of pullback now, based on other issues, like trade policies or anything else that——

Admiral HARRIS. With regard to China?

Senator REED. China.

Admiral HARRIS. No, right now, Senator. As I mentioned earlier, I think that we should compliment China for the work that they're doing to enforce the sanctions that the United Nations have—has put in place. I'm encouraged by China's activities in this space with regard to North Korea. They have a vested interest in the outcome, and I've said before that I think China remains the key to a peaceful outcome on the Korean Peninsula. But, China is not the key to all outcomes.

Senator REED. Now, with respect to China and our presence in the Pacific, the National Defense Strategy calls for a much more forward presence, denser positioning of platforms and personnel. That requires, obviously, the cooperation of the countries of the Asia area. Their trade relationships with China are increasing rather than decreasing. Would that make them hesitant to invite us in or support our efforts?

Admiral HARRIS. It could, because they have to value—they have to weigh a continued relationship and alliance—in some cases, an alliance; certainly partnership, in all cases—with the United States against economic advantages of their relationships with China. But, I do believe that the United States remains the security partner of choice. The work that you all have done to fund the budget for the next 2 years, I think that sends a strong signal of America's resilience and continuing interest in the Pacific, in the Indo-Pacific region. And I—and that goes a long way. The National Defense Strategy acknowledges that we're in strategic competition with China. I think that alone serves notice to not only China, but to our friends, allies, and partners in the region.

Senator REED. Thank you, Admiral.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Reed.

Senator Fischer.

Senator FISCHER. Thank you, Mr. Chairman.

Good morning, Admiral.

Last year, when you testified before the committee, you and I discussed PACOM's need for ISR [Intelligence, Surveillance and Reconnaissance]. I'm proud to represent Offutt Air Force Base and the 55th Wing, which provides support for that mission out of Kadina Airbase in Japan. Do you have enough ISR assets, including the RC–135s, to be able to meet the demands in your area of responsibility?

Admiral HARRIS. I do not, Senator.

Senator FISCHER. Can you describe how you use the RC–135 in PACOM?

Admiral HARRIS. Yeah, we're—yes, ma'am. We use the RC–35s, the Rivet Joint, for all—not all, but for a large portion of our signals intelligence requirements throughout the western Pacific,

whether it's in the northwestern Pacific focused on North Korea, or whether it's in the South China Sea area focused on China. But, RC–135—the Air Force's RC–135 and the Navy's EP–3 are critical to signals intelligence collection against our potential adversaries and adversaries in the region.

Senator FISCHER. When you said you don't have enough, is that because demand's increasing?

Admiral HARRIS. I don't have enough because there isn't enough to go around. When you look at a fixed amount of ISR assets, and all of the combatant commanders have requirements, then that—those requirements have to be apportioned by some entity. That entity is the Joint Staff, through the global force management process. You know, I think all of the combatant commanders would tell you that none of us have all that we want.

Senator FISCHER. Do you see demand increasing in the——

Admiral HARRIS. I do see demand increasing, clearly.

Senator FISCHER. North Korea's pursuit and aggressive schedule of nuclear testing, in my understanding, is that the WC–135s operating in PACOM provide valuable intelligence on those activities. Is that correct?

Admiral HARRIS. That is correct.

Senator FISCHER. Can you explain how that information helps inform your decisionmaking with regard to forces in the area of——

Admiral HARRIS. Well, the——

Senator FISCHER.—your responsibility?

Admiral HARRIS.—the WC–135 is a service retain asset that I have to ask for. When I ask for it, I always get it, which is a good thing. WC–135 helps me understand the nature of North Korea's nuclear testing.

Senator FISCHER. You mention, in your testimony, the fact that we risk losing the dominance of the air domain that we've enjoyed for decades in the Pacific. Both China and Russia are investing heavily in the A2AD [Anti-Access/Area Denial] and new fifth-generation fighters, and are rapidly closing the gap. Do you believe that we still have that air superiority in the region?

Admiral HARRIS. I do believe we have that air superiority. I think it's unquestioned now, but I can see a path where it might not be, unless we continue to resource it.

Senator FISCHER. Under what scenarios do you believe that we risk losing that superiority and, really, the freedom of access that we have?

Admiral HARRIS. If we don't overturn the Budget Control Act, if sequestration is the law of the land, remains the law of the land, and we're—and we fail to resource our requirements in air superiority, then Chinese development will continue apace, and there will be a timeline, a time of which those lines cross, and we'll lose our air superiority. Today, I believe we have it. I think the Congress's actions, as evidenced by the bipartisan agreement last month, I think that sends a strong signal and will help us maintain that advantage, at least through fiscal year 2019.

Senator FISCHER. When you talk about the advances that the Chinese are having, are you speaking of the technologies——

Admiral HARRIS. I'm——

Senator FISCHER.—that they're——

Senator FISCHER.—speaking both the technologies, in terms of Chinese development of fifth-generation fighters, and the weight of their numbers, alone. You know, I've often said, in that quantity has a quality all its own. And so, while the U.S. equipment and personnel, in terms of quality, far exceeds that of any of our competitors or potential competitors, quantity has a quality all its own.

Senator FISCHER. Can you speak to any certain technologies that you believe might seriously threaten us?

Admiral HARRIS. I believe China's development and research into hypersonic glide weapons is one of those technologies that they're working on that could threaten us significantly.

Senator FISCHER. Okay. Thank you.

Senator INHOFE. Thank you, Senator Fischer.

Senator Peters.

Senator PETERS. Thank you, Mr. Chairman.

Thank you, Admiral, for being here once again.

Admiral Harris, I'd like to ask you about Australia. Australia, as you're well aware, has been a very consistent United States ally for decades, but a recent article in Foreign Affairs discusses how China interferes in Australia, working covertly to manipulate the Australian political system by access and influence, and stealing research and intellectual property to aid China's military. Australia is also very closely linked, economically, to China, with about a third of their exports going to China, as well. But, despite these very strong economic ties, Australia has taken steps to resist China's influence, with public warnings that have been amplified by the press, including investigations into links between major political donors in Australia and the Chinese Communist Government.

Admiral Harris, could you elaborate a little bit on what you are seeing in Australia and their work? Are there perhaps lessons that we should learn as a country, based on Australia's experience with China?

Admiral HARRIS. Senator, surely.

I was in Australia last week. I visited with the Chief of Defense there, Air Chief Marshal Binskin. I believe that Australia is one of our strongest allies. They have been with us for literally 100 years. This year is the 100th anniversary of the first time American troops fought under a foreign leader, and that was General John Monash in 1918, in World War I. So, I have no doubt, there is no question about the solidness and strength of the American-Australian alliance.

Specific to your questions about Chinese influence, it is real in Australia. There is a book out that complements the article that you spoke about, called "Silent Invasion," and it talks about malign Chinese influence in Australia. I think Australia understands that. They get it. They're going after it.

Senator PETERS. Well, we should, and follow how they are doing. It's successful, you believe? Are those——

Admiral HARRIS. I believe there are——

Senator PETERS.—are there some lessons there for us?

Admiral HARRIS.—I believe there are lessons to be learned in the Australian case that are applicable to our situation.

Senator PETERS. Right. Thank you, Admiral.

Admiral, in your written testimony, you talk about the Communist Party General Secretary promising military development that would remain a national priority in China, and that he pledges to modernize by 2035 and achieve, "world-class status by 2049." You go on to say that you believe that they will achieve it well before those kinds of deadlines. So, talk a little bit about that progress. Perhaps, are there any benchmarks that we should look at to measure that progress, ones that should raise particular alarms to us?

Admiral HARRIS. Yeah. So, I believe the development of hypersonic weapons is a benchmark. I think the development of China's fifth-generation fighters, fighter aircraft is another benchmark. They are beginning to field fifth-generation fighters now, the J–20, and they're developing the J–31. So, I think these are things that we should watch carefully. As we watch them, observe them militarize their bases in the South China Sea, they're doing the vertical improvements on them now, and they're turning these islands that they've built into military bases, clearly. So, I think we have to keep our eyes on that.

I think the new move, politically, inside China is already a benchmark. Now, by that, I mean their decision to remove the term limits that has been in place in China since Deng Xiaoping became the leader there, and to have a president for life. I view that with concern. I mean, there is a possibility that, in 2049, the centennial of the Modern People's Republic of China, Xi Jinping could be the president then. I think that's—we should view that with concern. The kind of country, the kind of nation that China could be, we're getting a sense of that now, with this move to remove term limits for its leader.

Senator PETERS. So, given these challenges—and we've talked about many of them, and there will be many more challenges we'll talk about during this hearing—you also mentioned, in your opening comments, that we need to figure out a way to help China become a peaceful, cooperative partner with the United States. What sort of things can we do to, hopefully, get to that point?

Admiral HARRIS. Well, I do believe that we should continue to encourage China to be a peaceful, responsible partner. We shouldn't do that through rose-colored glasses. Our experience in the past has been that, if we—or our hope in the past, rather, has been that if we bring China into organizations like the World Trade Organization, and include China in our military exercises and the like, that somehow China will become like us. "Us" being not the United States only, but our democratic friends, allies, and partners. I think the expectation is, the reality is, that that's simply not true. China has taken advantage of our openness with China to continue on the path that they've always been on. We're seeing that play out now, in 2018. Certainly over the next 20 years or so, it'll be of concern to us. But, that shouldn't obviate the need to try. We should do so with eyes wide open.

Senator PETERS. Thank you, Admiral.

Admiral HARRIS. You bet.

Senator INHOFE. Thank you, Senator Peters.

Senator Cotton.

Senator COTTON. Thank you, Mr. Chairman.

Thank you, Admiral Harris, for your testimony and, once again, for your service.

I want to speak about critical munitions; specifically, ammunition. For all the fancy weapons we have in our military, if you don't have enough rounds, then you don't have much. The U.S. Navy has identified a number of shortfalls and unfunded priorities, going forward, in this area, including LRASM [Long Range Anti-Ship Missile], Harpoon Block II, AIM 96, and Mark 48. What would a shortfall of these munitions mean for you in the PACOM area of operations?

Admiral HARRIS. Ultimately, Senator—depending on the size of the shortfall, ultimately, it could mean we lose in war. I mean, you've got to have the munitions to beat the enemy.

Senator COTTON. Yeah. Safe to say, then, that, given the budget deal we reached last month and the additional funding for our military, that if this committee and this Congress can find more money for those munitions, that's something you would support?

Admiral HARRIS. The budget deal was very much appreciated, Senator. Thank you very much for that.

Senator COTTON. But, you would support additional funding for those critical munitions?

Admiral HARRIS. I would.

Senator COTTON. Thank you.

One kind of munition this country lacks, only country in the world that lacks it now, is a ground-launched intermediate-range cruise missile, because of the INF Treaty. Russia is not supposed to have those. We now know that Russia does, because they've been cheating on that treaty. Last year, we discussed this topic, and you stated, "The aspects of the INF [Intermediate-Range Nuclear Forces Treaty] Treaty that limit our ability to counter Chinese and other countries' land-based missiles, I think is problematic." Over the last year, China has continued to produce the DF–21, the DF–26 missiles. So, I think it's safe to assume that those challenges have continued to increase.

If this country were no longer a part of the INF Treaty and we could produce ground-launched intermediate-range cruise missiles, could you explain what that would do to the military balance of power in the PACOM——

Admiral HARRIS. Yes, sir.

Senator COTTON.—area of operations?

Admiral HARRIS. I think that we are at a disadvantage with regard to China today, in the sense that China has ground-based ballistic missiles that threaten our basing in the western Pacific and our ships. They have ground-based ballistic anti-ship missiles. We have nothing, we have no ground-based capability that can threaten China, because of, among other things, our rigid adherence, and rightfully so, to the treaty that we signed on to, the INF Treaty.

That said, there are good aspects of INF, and that is the nuclear piece of it, which we also adhere to. I think that's important. So, I'm not calling for us to pull out of the INF. I am asking and, suggesting rather, that we consider ways to work within the INF regime to overcome these shortfalls that are presented to us by China. Because INF, as you know, only affects us and Russia and the successive republics from the Soviet Union. It does not include

China. China's not a signatory to it. We can't reasonably expect, nor should we expect, that China adhere to a treaty that they're not a signatory to. But, it puts us at a disadvantage in the western Pacific. So, we could do anything from one extreme, to pull out, to the other extreme, to do nothing. I think we should look at ways to maximize our operational flexibility with regards to the advantage that China has over us, in terms of ground-based ballistic missiles.

Senator COTTON. Thank you.

One final question about the impact of the recent sanctions legislation this Congress passed, designed primarily with Russia in mind, and specifically countries that continue to use Russian military hardware and systems. I supported that legislation. I still do. But, I do have some concerns about potential unintended consequences among countries that, for various historical reasons, still have Russian hardware, and it would be hard to avoid Russian hardware. Is that a area of concern in PACOM?

Admiral HARRIS. It is, Senator. We're speaking here about the CAATSA [Countering America's Adversaries Through Sanctions Act] legislation. Secretary Mattis has sent a letter—it's classified in its entirety—to you all, asking for some relief from CAATSA. I can't get into the specifics of the letter, because of its classification, but I—my own opinion is that countries like India, where we are—we've made a key partner—I believe that India is a great strategic opportunity for the United States. Seventy percent of their military hardware is Russian in origin. You can't expect India to go cold turkey on that. I think they're—we ought to look at ways to have a glidepath so that we can continue to trade in arms with India. So, CAATSA affects that, and I hope that we can, you know, achieve some relief for the rigidity that's in that legislation.

Senator COTTON. Thank you. Your point—and I assume Secretary Mattis's point in his classified letter—is that you have a country like India that's a close ally, and growing ever closer, but, for historical reasons going back decades, they just rely on a lot of Russian equipment, and it would really impair them, and therefore our relationship with them, to try to ask them to go cold turkey immediately.

Admiral HARRIS. You are correct.

Senator COTTON. Okay.

Well, thank you very much for your testimony. I know you said this is the last time you'll appear in front of the Armed Services Committee. But, I know you'll have a hearing coming up soon in the Foreign Relations Committee, so you'll get to continue to tell the noble lie that it's a pleasure to be in front of Congress again today. But, most importantly, I know that I and probably most members of this committee will look forward to supporting your nomination to be our Ambassador in Australia. I'm very grateful you're willing to continue to serve in a new capacity.

Thank you, Admiral Harris.

Admiral HARRIS. Thank you, Senator.

Senator INHOFE. Thank you, Senator Cotton.

Senator King.

Senator KING. Thank you, Mr. Chairman.

Several things you have mentioned today, you've talked about China's activities in the South China Sea, and you also talked about Russian activities in the Arctic. In your view, would it be in the United States national security interests for us to be signatories of the U.N. Convention on the Law of the Sea?

Admiral HARRIS. My opinion, Senator, has not changed over the past decade or so. I'm an advocate of the United Nations Convention on Law of the Sea.

Senator KING. In fact, we're relegating ourselves to the sidelines as these disputes about continental shelf and relationships are being adjudicated.

Admiral HARRIS. I believe that UNCLOS [United Nations Convention on the Law of the Sea] gives Russia the potential to, "Own almost half of the Arctic Circle." We will not have that opportunity because of—we're not a signatory to UNCLOS.

Senator KING. We won't be in the discussion.

Admiral HARRIS. That is correct.

Senator KING. Thank you.

There's a great deal of discussion about a potential summit meeting between our President and Kim Jong-un. What, in your view, would Kim Jong-un want to get out of these discussions? In other words, number one, is it realistic that he would put his nuclearization on the table? Number two, if he did so, what would he want in return?

Admiral HARRIS. Senator, I don't know what Kim Jong-un actually wants out of the summit, but I do believe that, in a general sense, Kim Jong-un seeks reunification of the Korean Peninsula under his leadership, he seeks respect and status that nuclear weapons gives him, and he seeks security, which he believes the nuclear weapons give him.

Senator KING. What you said at the beginning was very important, reunification of the Korean Peninsula. What would be the impact on his calculus if we removed our troops from, and various security arrangements, from South Korea?

Admiral HARRIS. I believe he would do a victory dance.

Senator KING. In Seoul, probably.

Admiral HARRIS. I think he'd be a happy man if we abrogated our alliance with South Korea and with Japan.

Senator KING. Let's talk about China for a minute. I've thought for a long time that China's primary intention was commercial and regional hegemony, but their military buildup, it seems to me, indicates greater ambitions. What's your view of China's ultimate goal, here? Then I'll ask a second question about President Xi's ascension.

Admiral HARRIS. Yes, sir. I agree with you that I believe that China seeks regional hegemony. That means pushing the United States out of the Indo-Pacific region.

Senator KING. Do you think they have greater ambitions? They've now built a military base in Djibouti or——

Admiral HARRIS. I do. I think that—you know, as I said in my opening statement, just take them at their word, and they seek to be a global military and a global force. That, of itself, is not a bad thing. A country with great economic power ought to be able to buy and build the military that they choose. But, it's how they go about

it that's of concern. I think their actions speak for themselves, their provocative nature and their aggressive nature and how they deal with their neighbors. We see that play out in India—I mean, I'm sorry, we see that play in the Indo-Pacific on a daily basis.

Senator KING. As we see them develop this capability, my concern is, right now they may not have the will to be an aggressive territorial nation, but if they develop the capability, the will could change overnight.

Admiral HARRIS. I believe they do have the will. They don't have the capability.

Senator KING. But, they're building the capability.

Admiral HARRIS. They're clearly building to that capability.

Senator KING. I read recently that one commentator said they thought the greatest geopolitical development of recent years was President Xi's ascension to unlimited length, in terms of his authority. How do you see that—long term, do you see that as an advantage or a disadvantage?

Admiral HARRIS. I don't know, to be honest with you, Senator. There hasn't—you know, we haven't seen it play out. We just know the fact of it. I'm concerned about it. I mean, I think countries, at least historically, that choose presidents for life, it doesn't end well for their own people. I don't know how it will play out. It's something that we must watch closely to see how it goes.

Senator KING. Finally, you mentioned, in your earlier comments, Russia's role in North Korea. I think you used the term "spoiler." What do you see Russia, are they just going to—my father used to use the term "officious intermeddler"—are they going to just try to mess things up?

Admiral HARRIS. I do believe they're trying to mess things up. I think they'll meddle. I believe that if the sanctions that are put in place over North Korea are too hard on North Korea, including the sanctions that China are following—I believe that Russia will seek to relieve the pressure of the sanctions regime in the pressure campaign plan.

Senator KING. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator King.

Senator Perdue.

Senator PERDUE. Thank you, Mr. Chair.

Admiral, you called us out about President Xi Jinping's move. In '82 Deng Xiaoping put term limits in after the excesses of Chairman Mao's cultural revolution. We saw 30 years of economic development. Today, we have a leader for life in China. I see that development, along with the Belt and Road strategy that you so eloquently have called out over the last year, as two major initiatives that I think give us a hint at their long-term strategy. It looks like, if you look at the global map, a new world order could be in mind, here, between Europe, Asia, and Africa. In Africa, alone, they've got over 20 ports that they've invested in and developed. Today, they have $200 billion in loans in Asia, the Pacific, Africa, and Europe. They've promised over $1.2 trillion of future loans. That's ten times the size of the Marshall Plan that rebuilt Asia and Europe earlier, or in the middle part of last century.

Sir, my concern is that we already see their intent. The Marshall Plan was not loans, primarily. It was philanthropy. This investment, the 1.2 trillion that's coming, is mostly in the form of loans. In Africa, as an example, they're loaning money into these ports, in the ports' development. Sri Lanka, we already have an example where some of those loans went bad, and they, China foreclosed, and now China, for 99 years, has a port in Sri Lanka, in addition to Djibouti and in addition to what they're doing in the Belt and Roads strategy.

Can you tie together that for us, the danger it has to the world order we enjoy today, where representative democracies in the free world dominate the cultural/political situation? Do you see it this way? Are you calling that out for us to think about this in a longer-term perspective regarding to what we see evidence of right now, in terms of the China strategy with the Belt and Road, and also with President Xi Jinping's change to a lifetime leader?

Admiral HARRIS. Senator, I do see it that way. As I said earlier, I do believe that, for those of us, myself included, who wonder the kind of country that China will be in 2049, I think we're seeing that now. We're seeing that play out with this move toward a leader for life. We're seeing it play out in OBOR, One Belt, One Road, or the Belt-Road Initiative, which is not only about development, which, of itself, is a good, but it's not about development as much as it is about malign influence throughout the region, making China the security partner of choice and pushing the United States and our friends, allies, and partners out of the region. So, I think it has a strategic impact beyond simple development.

China announced, a few weeks ago, the Polar Silk Road. That's a clear indication that China views the Arctic as a sphere of influence for them. They are some—there are some Chinese scholars that would actually suggest that the resources in the Arctic, a portion of those resources, should be China's because they have a fifth of the world's population.

So, I think we should look at that carefully, consider what that means in the long term. China is putting their money where their mouth is. They have four icebreakers, and building to a fifth. I think that's significant. You know, why would a country have that kind of capability if it has no border on the Arctic or Antarctic? Because they're interested in the resources that are there, because they've called that out and named it the Polar Silk Road.

Senator PERDUE. Thank you, sir.

Following up on that, the committee took the lead recently in establishing the Southeast Asia Maritime Security Initiative in the fiscal year 2016 NDAA to support maritime domain awareness capabilities of our partners and allies confronting sovereignty challenges in the South China Sea. You've called out the dangers in South China Sea. You talk about thousands of acres of reclaimed property there, used primarily for military use. This program, the Southeast Asia Maritime Security Initiative, is now ramping up, with $98 million requested in the fiscal year 2019 budget. Would you please give us your assessment of the strategic importance of the Maritime Security Initiative? In your view, what signal would it send if this initiative did not receive full funding?

Admiral HARRIS. Senator, I'm a big believer in the Maritime Security Initiative. It's $425 million across five years. It's not a lot of money. But, we have put the $190 million or so over the past 3 years, including this year, to good use. We've put it to use to improve maritime domain awareness. The Maritime Security Initiative affects our Southeast Asian partners, principally Indonesia, Malaysia, the Philippines, and Thailand, and Vietnam. We're using this funding to improve their maritime domain awareness, so they can understand what's happening in their water space. We're using it to improve things like the Zulu Sea Initiative, which goes after sea crime, kidnap for ransom, and piracy in the Zulu Sea, in the Gulf of Thailand area. These are important things that signal our interest and our willingness to help our friends and allies and partners that are affected by the Maritime Security Initiative.

To cut that funding or to pull us out of it would send the wrong signal at the wrong time, in my opinion.

Senator PERDUE. Thank you, Admiral.

I just want to echo the voices of my colleagues in thanking you for your decades of service, and for your willingness to continue that service in Australia. It's a very critical post, as you well know and as we heard earlier in question. I just thank God for your career and your help for the United States of America.

Thank you, sir.

Admiral HARRIS. Thank you, Senator.

Senator INHOFE. Thank you, Senator Perdue. We all agree with that.

Senator Hirono.

Senator HIRONO. Thank you, Mr. Chairman.

Admiral Harris, this being your last testimony before this committee, I certainly join my colleagues in thanking you for your distinguished service throughout your career, and especially your last two tours in Hawaii as Commander of Pacific Fleet and your current assignment as Pacific Commander—PACOM Commander. And we, in Hawaii, will miss you and your wife, Bruni, who I also had the privilege of getting to know, for your leadership and your participation in our—support of the community in Hawaii. Of course, we wish you well as you move into your next chapter of life. You and Bruni will always be a part of our Hawaii ohana.

There's no question that we're now in a period of great-power competition with China and Russia. I think China's goal is to become a global military and economic power. As you say, it's how they go about it that's concerning. They do not play fair. I'm glad that you are very clear in your support for the United States signing on to UNCLOS. There might have been a time when our country not being a signatory to UNCLOS maybe didn't matter that much, but now, with global warming and climate change, places like the Arctic Circle become very attractive to countries such as Russia. As you note, there is a potential that Russia will control almost one-half of the Arctic Circle. So, I would say that it is time for Congress to visit the issue of signing on to UNCLOS, and we should sign on.

In past hearings, you and I have discussed the importance of the whole-of-government approach to what we do and concerns with the administration's cuts to the State Department and Treasury,

along with the effects that these cuts would have on foreign diplomacy, your mission, and the ability to combat our adversaries in the Pacific region. In your testimony, you specify that countering violent extremism in the Indo-Pacific requires close collaboration with United States Government interagency partners, such as the Department of State, Treasury, the FBI [Federal Bureau of Investigation], USAID [United States Agency for International Development], and other intel agencies. Can you discuss briefly the importance of this whole-of-government approach to accomplish PACOM's mission? What are the effects of cuts to the State Department and Treasury personnel on your mission? How do these cuts impact your ability to counter threats in the Indo-Pacific region?

Admiral HARRIS. Thank you, Senator.

I do believe that the challenges that we face are not solely military challenges, even though I'm a military officer in charge of a geographic combatant command. I believe that a strong State Department complemented by a strong Defense Department, and diplomats complemented by military personnel, is the key to a strong American position. In terms of funding, a weak State Department means you have to have a stronger Defense Department. I think it would be so much better to have both funded to the level they should be funded.

Senator HIRONO. So, at 26 percent cut to the State Department will be concerning to you, in terms of your ability to carry out your mission.

Admiral HARRIS. As I understand the State Department, it would be. But, I suppose that, you know, I mean, the devil's in the details. It depends on how it's cut, what's cut, and so on. Generally speaking, I think we need a fully funded State Department complemented by a fully funded Defense Department to project American power correctly, in my opinion.

Senator HIRONO. As we see what's going on with North Korea, it is not helpful at all. I believe you have said that we should have an Ambassador to South Korea appointed.

Admiral HARRIS. I don't believe I said that, per se.

Senator HIRONO. Or others have said.

Admiral HARRIS. I'm——

Senator HIRONO. Do you join that?

Admiral HARRIS. I'm pleased with Constable—with the Charge, rather, Mark Knapper. I think he's doing a great job. He works very closely with General Vince Brooks. I think our Korean allies know who to turn to for questions they have, whether they're diplomatic questions or military questions.

Senator HIRONO. And yet, we don't have an Ambassador to South Korea, and also, the Envoy to South Korea from the State Department also left. So, these are not helpful conditions.

As you know, the United States, Japan, India, and Australia have a quadrilateral regional cooperation supporting a free and open Indo-China region. Can you discuss briefly the importance and impact of the quadrilateral regional cooperation to the U.S., its allies, and on your PACOM mission?

Admiral HARRIS. I believe that the Quad is important. I think these are Japan, United States, Australia, and India form a natural grouping, if you will, a natural grouping of democracies to face

the challenges that are out there in the region. So, I'm pleased with the Quad. I don't think the Quad, that it has to be four. I mean, I think the Big Ten has 12 teams, and the Big 12 has 14 teams. So, I don't think we're obligated to the number four. But the nature of it, the sense of it is that these are democracies that are linked, in terms of values and in military relationships, and we should advocate for this.

Senator HIRONO. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you.

Senator Sullivan.

Senator SULLIVAN. Thank you, Mr. Chairman.

I do want to just mention, because I know Senator Hirono's mentioned it, Senator Warren, you know, I think this comes up in the Armed Services hearings a lot lately, is, this concern about not getting enough nominees out to the State Department, for the Department of Defense, from the White House, from the administration. I think they could do a better job. But, I do think that my colleagues on the other side of the aisle then don't talk about the next issue, which is how there's unprecedented, historically unprecedented blocking of nominees. So, my colleagues, they can't have it both ways. We'll encourage the administration, get more people out, a South Korean Ambassador, Assistant Secretaries of State and Defense—but, my colleagues on the other side of the aisle can't then just say, "Now we're going to take 30 hours for every nominee that comes before the Senate." It's not—you can't have it both ways. Let's work on getting nominees, and then you guys can help us stop the historic obstruction of these nominees. I think that would be a good compromise, and I'm certainly ready to do that.

I know that's not your issue, Admiral, although it might be your issue when you're nominated to be Ambassador to Australia. I certainly hope my colleagues don't block you for seven months. I think the German Ambassador has been blocked for months now, and few people on the other side want to talk about that.

Admiral, I want to show you a slide. I think you have a copy, and it's right there on that chart—but, it's the evolution of how China has been talking about the South China Sea militarization. As you see there, in September in the Rose Garden with President Obama, Xi Jinping essentially said, "We're not going to militarize." So, that's standing next to the President of the United States. Then, slowly but surely, they've come out and—with the most recent Global Times-Voice of China, essentially saying, "Hey, you know, we're going to be a big, strong military power. Yeah, maybe we will." So, how do you interpret that evolution? I don't think it's very useful to have the leader of a country standing next to the leader of our country, saying they're not going to do something, when—do you think, in 2015, the master plan was to do it, even though they said they weren't?

Admiral HARRIS. I do believe that, in 2015, China had a plan to militarize the South China Sea. I don't think there's—this is a pretty good graphic. I—it's—there's nothing to—there's no interpretation needed, here. Clearly, China is militarizing the South China Sea.

Senator SULLIVAN. In terms of their—I have very much appreciated your policy statement, which is, "We're going to cooperate, where we can, but confront." I think sometimes China has come out and said, "Well, we were forced to do this because you're running Freedom of Navigation operations in that region." How long have we been running FONOPs in the South China Sea as a United States Navy?

Admiral HARRIS. Senator, as a policy item, Freedom of Navigation Operations, we've been doing those for decades. The United States Navy and the United States Air Force have conducted operations in and above the South China Sea for even longer periods of time. We have been a presence—we, the United States—we have been a presence in the western Pacific for over 70 years.

Senator SULLIVAN. Your point about how, in some ways, that was key to the rise of China, because keeping sea lanes open has helped the international order, and no country's benefited more from that——

Admiral HARRIS. Right.

Senator SULLIVAN.—than China. I think it's a really important one.

Next you mentioned the Polar Silk Road. I'd just like to note that we're trying—right now, Russia has 40 icebreakers, and they're building 13 more. China has four, and you say they're building a fifth. We have two, and one is broken, and yet, we're an Arctic nation. We're an Arctic nation because of my State, and they're not. So, what do you, again, think their intentions are there?

Admiral HARRIS. I believe their intentions are clear. They're interested—China is interested in the resources in the Arctic Circle. Russia is interested in the security aspects of the Arctic Circle. Russia is using UNCLOS to its advantage. I think that we are at a disadvantage because we don't have the icebreakers and stuff that the other countries have. But, I do want to acknowledge and thank the Congress for putting icebreaker in the 2019 budget.

Senator SULLIVAN. Well, that's progress, but we need to make a lot more progress.

Let me ask one final question, Admiral. So, I think we should acknowledge that China has actually been helpful with the administration's approach to North Korea. I think that they've done more than they ever have previously. I think we've made more progress on this maximum pressure campaign than previously done, including good work at the U.N. Security Council. Do you see China being helpful in the future on this? What do you think their strategic calculation is with regard to North Korea?—when, so far, they have moved pretty far. I think it's important that we acknowledge that. What do you anticipate, particularly as we get to this moment where, if the President's going to meet with Kim Jong-un, obviously there's going to be a lot of diplomatic focus, and focus with regard to our allies in countries like China on the importance of this issue?

Admiral HARRIS. Yeah, I—Senator, I believe, in 2018, that China is probably—I mean, I don't know for a fact, but I believe that China is probably as worried about the path that North Korea is on, vis-à-vis its nuclear weapons, as we are. I think, in the past, China viewed North Korea as a way to pressure the United States.

It could—and all that that entails. But, today I think what happened in 2017, in 2016, was a wake-up call for Beijing to—and it made them realize what a danger North Korea poses, not just to the United States or South Korea or Japan, but a danger it poses to China and the danger it poses to stability in the Indo-Pacific. So, now they're helpful. I appreciate that help. As you say, we should compliment and acknowledge them for the work that they're doing.

Senator SULLIVAN. Right. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Sullivan.

Senator Warren.

Senator WARREN. Thank you, Mr. Chairman.

Thank you, Admiral. Thank you for your many years of service. Thank you for being here today.

I'd like to spend my limited time this morning on our National Defense Strategy. The Trump administration recently released its National Defense Strategy report, and the unclassified version says that, "Long-term strategic competitions with China and Russia are the principal priorities for the Department of Defense. The strategy stresses the need to modernize existing equipment, invest in advanced capabilities, and enhance the readiness of the joint force for a high-end fight."

Admiral, I know you've been focused on managing the challenge posed by China, but your area of responsibility also includes China's neighbor, North Korea. Many analysts estimate that a conflict on the Korean Peninsula could bog us down for years, degrading our equipment and potentially resulting in thousands of casualties both to our allies and to our own troops. So, let me ask, Admiral, What would be the impact of a long-term conflict on the Korean Peninsula on our ability to prepare for a high-end conflict like the kind described in the [National] Defense Strategy?

Admiral HARRIS. Thank you, Senator.

I do believe that a conflict on the Korean Peninsula will result in thousands of casualties. I believe that China could be opportunistic, in terms of what they do in their area if we're bogged down in Korea. But, I don't believe that we should allow our concern or fear for what could happen with China detract us from our treaty obligations with South Korea and to defending our own Homeland, which is the threat posed by North Korea.

Senator WARREN. I appreciate that, Admiral. I'm asking about the difficulties that are posed, here. So, let me just as a different question related to this. Would we be able to maintain our technological investments to counter China if we were engaged in a sustained ground war in North Korea?

Admiral HARRIS. I think we would be able——

Senator WARREN. All right.

Admiral HARRIS.—to do that.

Senator WARREN. You know, I was glad to see other President's renewed interest in diplomacy last week. I'm not sure if he recognizes the enormous complexity of these negotiations and the fact that a breakthrough may not occur overnight, but I think we should all be hoping for success, because a ground war on the Korean Peninsula would be devastating to our long-term strategic interests in the Indo-Pacific region and around the world.

Admiral Harris, while I have you—and I still have 2 minutes left—I want to ask one other question. I know that you support CFIUS [Committee on Foreign Investment in the United States], which reviews acquisitions by foreign companies for threats to our national security. You support reform to capture a wider range of transactions and technologies, particularly as they relate to China. You have made the point that China is blurring the lines between military and civilian activity and exploiting America's open system to gain access to sensitive technologies.

I agree with you that we need to protect our most advanced technologies. But, there are two sides to this coin. Our adversaries will be interested in stealing from us only as long as we continue to produce the most innovative science and technology in the world. Being at the top of that heap is not a guarantee, it's not a birthright, and, in fact, right now China is also investing heavily in R&D [Research and Development], including in areas like physics, robotics, high-performance computing, nanoscience.

So, Admiral, do you think that government investment in research and development helps maintain our military advantage? Would we improve our chances of maintaining technological superiority over China by increasing our R&D investments in advanced technologies?

Admiral HARRIS. I do. Senator, I'll also add that government investment can't be the only source of innovation in the United States, and it hasn't been in the past, nor should it be in the future. I'm a big supporter of what we colloquially call CFIUS 2.0. I wrote a letter to Senator Cornyn about FIRRMA [Foreign Investment Risk Review Modernization Act of 2017], the new law on this. I believe we have to be sensitive to our open society and what that does for our adversaries, the advantages that it gives our adversaries.

In terms of China, that's manifested in both technology and technological change and in a Chinese acquisition of large tracts of land that are adjacent to our training and electronic ranges.

Senator WARREN. Yeah. Well, I do see this as—both sides. I think we're in agreement on this, that, on the one hand, we've got to be very sensitive about what they're trying to steal from us; but, on the other, we've got to continue and even, I believe, ratchet up our investments so that we maintain our technological superiority.

Admiral HARRIS. Absolutely. No argument from me on that.

Senator WARREN. Good. I'm glad to hear it. Thank you, Admiral.

Admiral HARRIS. Yeah.

Senator INHOFE. Thank you, Senator Warren.

Senator Tillis.

Senator TILLIS. Good morning, Admiral Harris. It's good to see you again. Thank you for your service.

I was thinking about you. You know, I'm from North Carolina, so, when I was filling out my bracket, I had to pick the Tarheels to go all the way. But, then I got another bracket so I could pick the Volunteers. So——

Admiral HARRIS. Thank you, Senator.

Senator TILLIS.—I want you to know the—Tennessee's got a special place in my heart. I know it does for you.

Just two questions. One, there were some press reports about the 1987 Intermediate-Range Nuclear Treaty [INF] that you have expressed some concern over, or at least there were some reports. Could you expand on that for the purposes——

Admiral HARRIS. Yes, sir.

Senator TILLIS.—of this committee?

Admiral HARRIS. The INF Treaty is an important piece of diplomacy. It was formed and signed in 1987 by Presidents Reagan and Gorbachev of the Soviet Union. It was the right treaty for that time, when we were in a bipolar world.

Today, we're not in a bipolar world, we're in a multipolar world. I think the restrictions that the INF Treaty places on us ought to be looked at, particularly when you consider that countries like China and Iran are not signatories to the treaty, and there is no obligation for them to follow any part of the treaty. We follow it to the letter, because we're America, and we do what we are—we sign on to do. As has been mentioned earlier, Russia has violated the Treaty routinely for the last number of years. So, I think there are aspects of the treaty that we ought to look at.

The nuclear restrictions in the treaty, I think are important and commendatory, and we should keep those in place. But, the treaty also restricts our ability to deploy ground-based ballistic missiles that counter ballistic missiles that threaten us, our ships and our bases, from countries like China.

Senator TILLIS. Thank you. You're going to be moving, and I hope you will be swiftly confirmed as Ambassador to Australia. I'll be supporting your nomination. I hope my colleagues on the other side of the aisle will let us get that done quickly. But, I believe, when we met with you in PACOM a couple of years ago, we talked a little bit about trade and how alliances with how the economic alliances are pretty important. We know where TPP [Trans Pacific Partnership] ended up. But, what's your opinion on the—on that side of the equation? When you go to Australia, for example, who would have been one of the TPP partners, what do you think we need to do down there, at an economic level or strategic level, to make our military relationship stronger?

Admiral HARRIS. Senator, I was interested in the TPP, when it was first postulated, because of the security linkages that I saw TPP affording us and our friends, allies, and partners that were also part of TPP, when it was the TPP 12. I talked to some folks yesterday. You know, there are very few things that are—that engender bipartisan support today. One of those was pulling out of TPP. Both parties were opposed to it, and both candidates were opposed to it.

That said, the other 11 countries that were involved in TPP, they went ahead and formed, on their own, TPP 11. I think that, if we can get a fair and equitable and—a trade pact with them, that we might want to consider getting into it.

But, I'm not a trade expert or an economics expert, for that matter. You know, my theory in life has been to buy high, sell low. It hasn't worked well for me. So, here I am today.

I look at the security parts of it, though, and there were clearly advantages, because it links us, in the security space, with these countries. There are aspects of the original TPP that included cy-

bersecurity, intellectual property security, and that kind of stuff, which I thought was important, and it merited some—it merited a deeper look.

So, I don't know where we're going to be with regard to TPP 11, whether we'll join it or not, it's an important grouping, and we'll have to look at it and see if there's a way that we can achieve what the President seeks, in terms of fair and equitable trade.

Senator TILLIS. Well, thank you very much. I appreciate your many years of service to the Nation. I look forward to your continued service in the position as Ambassador.

Thank you.

Admiral HARRIS. Thank you, sir.

Senator INHOFE. Thank you, Senator Tillis.

Senator Donnelly.

Senator DONNELLY. Thank you, Mr. Chairman.

Admiral, thank you very much.

As you may know, last year's NDAA included a provision I authored requiring the White House to submit a report on North Korea strategy within 90 days. The report was supposed to include, among other components, a detailed roadmap that identifies United States objectives and a desired end state, a clear timeline, and an assessment of unilateral and multilateral policy options with respect to the situation in the Korean Peninsula. The administration is late on that report at the present time.

In light of the recent developments that we've seen on a possible meeting between the President and Kim, I'm even more convinced than ever that the administration needs to have a clear vision and a comprehensive strategy, and they need to present it to Congress.

So, I'm asking you, What do you think are our interim objectives for these talks with North Korea?

Admiral HARRIS. Sir, I believe that we'll go into these talks, hopefully, eyes wide open, and that, you know, we continue to seek what we've said all along, a complete and verifiable and irreversible Korean—denuclearized Korean Peninsula. I think that's what we're going into those talks with, and hopefully we'll come out in—with a framework that satisfies the President.

Senator DONNELLY. Do you consider it a success if there's no discussion of denuclearization on the Korean—on the North Korean side, but simply just, "We'll stay where we are right now"?

Admiral HARRIS. I don't know where we're going to end up with the talks. I don't think that the talks will be such that we accept as a positive that we end up where we are. But, I'll go back to what Churchill once said, you know, "It's better to talk, talk, talk than shoot, shoot, shoot."

Senator DONNELLY. Right.

Admiral HARRIS. So, the fact that we're talking at all has a positive framework around it.

Senator DONNELLY. What do you think happens if, after these talks, there's no agreement made? Does that change how things continue moving forward after that point?

Admiral HARRIS. I couldn't tell you, looking into the future. But, I think that the fact that we talked, that has a value. If the talks produce nothing, you know, we're talking about talks in April or May, I guess—soon, anyway, so we haven't lost anything by talk-

ing. So, the opportunity to engage is—has value of itself, regardless of the outcome.

Senator DONNELLY. I'm just curious, what do you think Kim is hoping to get out of this? Obviously, I'm not holding you to an exact replication after the talks are over, but you know, you're in a position of great influence and have done extraordinary service for our country. What do you think Kim is looking for out of this?

Admiral HARRIS. Well, if you're asking me to read his mind, I mean, that's a dark place. I'm——

Senator DONNELLY. I'm not asking you to read his mind.

Admiral HARRIS. But——

Senator DONNELLY. I'm asking, your years of experience, to give me an idea.

Admiral HARRIS. I believe that he seeks security and he seeks respect and he seeks a reunification of the Korean Peninsula under his leadership. Those are his ultimate gain—ultimate objectives, in my opinion. The talks, if they produce results, or if they produce further talks to hopefully produce some good results, that'll be where the details lie.

Senator DONNELLY. What do you see as the biggest challenges with North Korea now? What can we do to help you solve those?

Admiral HARRIS. I think the biggest challenge with North Korea is their nuclear program, their—both their missile development program and their weapons, themselves. I think that one of the areas that I need help in that I don't have is persistent ISR—intelligence, surveillance, and reconnaissance—so I can keep eyes on, an unblinking eye on North Korea, which we do not have today.

Senator DONNELLY. Well, let me just change, for one second—I've just got a little bit of time left—on Conventional Prompt Strike. It's my understanding that PACOM, alongside STRATCOM [United States Strategic Command] and EUCOM [United States European Command], has identified the development and fielding of a Conventional Prompt Strike system as a high priority. Is that correct? If so, could you elaborate on——

Admiral HARRIS. It is correct, Senator, but I would like to respond to that question in a classified manner for the record.

Senator DONNELLY. Okay.

Admiral HARRIS. I'll take that question, as well.

Senator DONNELLY. That would be great.

Senator DONNELLY. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Donnelly.

Senator Sasse.

Senator SASSE. Thank you, Mr. Chairman.

Admiral, thanks for being here.

Could you say publicly on the record some of what you've said to a number of us in private the last 2 or 3 days about how big China's Belt and Road Initiative is?

Admiral HARRIS. Senator, what I said the last couple of days was, it's probably the biggest development program in the world. It's five times the amount of money that the United States,—corrected for 2018 dollars, what the United States put into the Marshall Plan. It's a significant investment by China. The difference, as was mentioned earlier, was, the Marshall Plan was philanthropic in nature and was designed to lift up the countries in Eu-

rope following World War II. One Belt, One Road is designed to lift up China.

Senator SASSE. Yeah. I think, just to underscore that, the Marshall Plan, which was foundational to the 75 years of military alliance across the Atlantic and of economic prosperity that benefited the United States and all of our allies, this current Chinese initiative is more than five times larger in net present value. Is the Belt and Road Initiative partially intended to marginalize the United States influence in the Pacific?

Admiral HARRIS. I agree.

Senator SASSE. What do our allies think right now—our military allies, think about China's Belt and Road plans?

Admiral HARRIS. Well, our allies, as well as our friends and partners, they have to balance their own national interests, and they have to balance China with the United States. You know, we're not asking them—or any country, for that matter, to choose between China and the United States. What we hope is that they'll see One Belt, One Road potentially for what it is. I think that, you know, our allies are smart enough to do that, and they'll make the decisions that benefit them, and us, in terms of our alliances.

Senator SASSE. I'd certainly agree with you that we view a world where people should have commerce and peace with lots and lots of their neighbors, even in a multipolar world where the United States and China, over the coming decades, are going to be outsized, relative to everyone else. And yet, nations are partly going to be forced to choose between a rules-based international order and a Chinese system that is more interested in lifting up China with more vassal state supplicant near neighbors.

I know that you're not allowed, given your current calling and position, to answer a question as direct as, Was it wise or foolish for the U.S. to pull out of TPP? But, you can speculate with us. Is China happy that the United States pulled out of TPP?

Admiral HARRIS. I believe that China took advantage of the fact that we're not in TPP to try to drive a wedge between us and our TPP partners. China had a plan, the RCEP, the Regional Comprehensive Economic Program, as a counter to TPP. Most of the countries—not all, but most of the countries that were in the original TPP formulation are in RCEP. So, that should tell you, right there, that China sought to drive a wedge between us and our TPP partners.

Senator SASSE. Toggling between your current calling and where you're likely headed next, I'm, here with everybody else on this committee, sure that you're going to be easily confirmed as Ambassador, and we're grateful for your continued service—when you look at your current calling and your next calling, the TPP without the U.S., can you speculate a little bit about what the potential ways that we might get back in might be?

Admiral HARRIS. I can't, Senator, other than to say that, if we can reach a fair and equitable trade agreement with the TPP 11 countries, then that's probably the key to us getting back in. But, as I said before, I'm focused on the security aspects of any relationship like TPP, rather than economic aspects, of which I'm not an expert.

Senator SASSE. Thank you very much, sir.

Senator INHOFE. Thank you, Senator Sasse.

Senator Nelson.

Senator NELSON. Senator Sasse, I asked Admiral Harris, upon him taking over as Pacific Commander, what was one—this is now 3 years ago. Congratulations to you. This is a perfect position for you to go into as Ambassador. I asked, What's one of the most important things for our national security in the Pacific region? Three years ago, the Admiral said passing the Trans-Pacific trade agreement. Okay. So, 3 years have passed, and all of this has happened. As brought out by your questioning, that puts us at a significant economic disadvantage.

So, Admiral, you're going to be a diplomat in a short period of time. Now, of course, as a Commander and as a warrior, you've also been a diplomat, to wear those four stars. But, you're going be a real Ambassador. What do we do now to make up for the lost last year and a half?

Admiral HARRIS. I'm not sure what we've lost in the last year and a half, Senator, I'm sorry.

Senator NELSON. Well, how do we gain back the economic advantage in the Pacific?

Admiral HARRIS. Well, I think we have to stay with it. You know, we have to keep at it. I mean, there—it's not just the economic issues that are resident in the Pacific that are important to America. It's the security relationships and the whole framework that's informed by security, on one part, the economy, on the other part, and cultural ties that bind us to the countries in the Indo-Pacific region.

Senator NELSON. Okay, understood. Are you in a position to offer an opinion with regard to trying to resurrect something of a Pacific trade agreement?

Admiral HARRIS. I am not in that position, Senator.

Senator NELSON. Will you be, as Ambassador?

Admiral HARRIS. I might be, depending, I've never been an Ambassador, so I'm not sure what challenges will cross my desk then if I am—if I'm given that opportunity, if you all give me that opportunity, but I'll take it on and do what I have to do, you know, if I'm fortunate enough to be confirmed.

Senator NELSON. You will be confirmed.

Admiral HARRIS. Thanks.

Senator NELSON. As Ambassador to one of our important—very important allies in the region of the Pacific, I think it's going to be exceptionally important for you to weigh in on this, because I—this Senator, and by the implication of the Senator previously questioning, by his implication, his opinion that we're losing ground economically, that they're getting in ahead of us.

Tell me, in your prepared testimony, you highlighted the threat of China's growing arsenal of intermediate- and short-range ballistic missiles and on their threat to our forces. That certainly is a greater threat. How do we best defend against this threat, and particularly protect our people in the region and ensure their ability to operate?

Admiral HARRIS. Senator, I think it's key that we maintain our credible combat power. I think it's important that we fully resource the Department's needs. I'm grateful to the Congress for doing that

in this two-year budget deal. I'm hopeful that we'll get an appropriation to match the deal. But, that's the most important thing, that we demonstrate to our friends, allies, partners, and adversaries that the United States is neither a disinterested or a declining power globally and in the region.

Senator NELSON. Do we need additional THAAD [Terminal Altitude Area Defense] missiles in the region?

Admiral HARRIS. Today, I'm satisfied with the ballistic missile defense architecture that's resident in the region: THAAD, in Korea; THAAD, in Guam; Patriots, throughout the area; and Japan's intent to buy Aegis Ashore; and our Aegis ships, and our ally—and Japan's Aegis ships. That architecture works today.

I'm concerned about the North Korean missile development and where it'll be in the future. I'm grateful that we funded—that you all have funded the defense of Hawaii radar, the Homeland defense radar for Hawaii. That's an important thing. I've asked the Missile Defense Agency, the MDA, to study whether we should have ground-based interceptors in Hawaii, or not. I'm not smart enough on that to know, but I think we ought to study it in advance of where we think North Korea's missile development will go. Today, the architecture is sufficient, but it might not be, in the mid-2020s.

Senator NELSON. In the mid-2020s, what we know about national missile defense, do you have the information, on the top of your head? What is our ability to hit an ICBM [Intercontinental Ballistic Missile] out of North Korea today with our national missile defense—with those radars in Alaska?

Admiral HARRIS. Sir, without getting into the classified area, where—which I'm skirting pretty carefully right now with that question.

Senator NELSON. Understood.

Admiral HARRIS.—I'm confident in our systems today, and I don't own those systems for us. You know, that's Northern Command, and I'm confident in Lori Robinson's ability to do that today.

I'd like to respond to that more fully, more fulsomely, with a classified question for the record.

Senator NELSON. That would be good, especially for 2020 and beyond.

[The information referred to follows:]

[Deleted.]

Senator NELSON. I thank you, Admiral.

Admiral HARRIS. Yes, sir.

Senator NELSON. Thank you, Mr. Chairman.

Senator INHOFE. Thank you.

Senator NELSON. Congratulations, again, to you. He's a Pensacola boy. Florida makes good again.

Admiral HARRIS. Thank you, sir.

Senator INHOFE. Good.

Senator King—Kaine.

Senator KAINE. Thank you, Mr. Chair.

Admiral Harris, I'll add my congratulations to you for wonderful service in this area. Look forward to working together with you in new ways.

I want to ask you a couple of things. Might have been covered, but they matter to me, and I'll—and they're important.

So, we've seen, in the press, discussion of, obviously, not just the concerns that we legitimately have about North Korea, but there's been a phrase that's been used publicly about, well, whether we could engage in sort of a "bloody nose," some kind of a preemptive strike against North Korea. That makes it sound, you know, pretty de minimis. But, my assumption would be, in calculating the validity of any such step, you would need to calculate what a likely response would be by North Korea. You couldn't go in with the expectation that it would just be sort of a one-off thing and with a guarantee of no response. I think the response you'd have to contemplate would be twofold. One would be, What would North Korea's response would be? But also, If the United States took some sort of unilateral or preemptive action, might it draw others into a conflict—China, for example—with the historical precedent of the Korean War as an example? I'm assuming that, as the DOD contemplates its own options, those sort of downstream consequences are things that you definitely think about. Am I correct in my assumption?

Admiral HARRIS. Yes, sir. We have no "bloody nose" strategy. I don't know what that is. The press have run with it. I'm charged with developing, for the National Command Authority, a range of options through the spectrum of violence. I'm ready to execute whatever the President and the National Command Authority directs me to do. But, a "bloody nose" strategy is not contemplated.

Senator KAINE. Again, I'm not going to ask you about what you advised the President. I'm going to ask you about your military judgment. It would not be a smart thing to think we could take some affirmative action against North Korea and then assume that there would be no action in response, either against us or maybe against South Korea. We couldn't also assume that it wouldn't draw other adversaries, potentially, into the conflict, correct?

Admiral HARRIS. Right. I believe, Senator, that if we do anything along the kinetic region in the spectrum of conflict, that we have to be ready to do the whole thing.

Senator KAINE. Yeah.

Admiral HARRIS. We are ready to do the whole thing, if ordered by the President.

Senator KAINE. Thank you.

You and I talked, and I know you've talked a bit about this, but I'm really intrigued with the notion of the Quad that has been discussed in some public hearings at Munich Security Conference, the notion of deepening the relationships between the United States, Japan, Australia, and India around security cooperation. Senator King and I visited India in October of 2014, and visited the shipbuilding industry in India. Under the Indian President [Narendra] Modi's Government, it does seem like there's new opportunities for us to be partners. The Indian navy sent a delegation to the United States a year or so later to look at our shipbuilding capacity. So, talk a little bit about the Quad, and maybe, in particular, since we've had longstanding security cooperation with Australia and Japan, how the addition to India to some of our security cooperation enhances American interests in the area.

Admiral HARRIS. Senator, I've said, for the last 2½, almost 3 years, that I think India is the biggest strategic opportunity for the United States. We share democratic values, we share the same concerns, and we operate more frequently in the Indo-Pacific region together. I think the Quad is an important construct of like-minded nations that can go after the challenges that are in the Indo-Pacific region. So, that's Japan, United States, Australia, India. But, as I said earlier, you know, it's not—the Quad is an idea. It's not rigid, I don't believe.

Senator KAINE. It's not exclusive.

Admiral HARRIS. Right. I mean, as I said, I think the Big 10 has 12 teams, and the Big 12 has 14 teams, or something like that.

Senator KAINE. That's a very astute observation that you made.

Admiral HARRIS. So, I mean, we're going into March Madness now. So, I think the Quad is an idea. It's an important idea that I think the countries are starting to get their arms around, including the United States. But, India presents a great opportunity for us. I think we present a great opportunity for India.

Senator KAINE. You also have said, and I agree with you, that Vietnam presents an opportunity. It's an opportunity with some challenges, obviously, and yet the [USS] *Carl Vinson* just was in Vietnam. I think it's the first carrier visit to Vietnam. That's a pretty big thing, in terms of showing the relationship of our nations. If you could, just maybe address opportunities there, as well.

Admiral HARRIS. Yeah, Vietnam is an important country to the United States and to the region. What Vietnam says matters, regionally and globally. They stand up to China. They're concerned about Chinese expansion and aggressiveness in the South China Sea. To your point about *Carl Vinson,* the USS *Carl Vinson* was the first carrier to visit Vietnam since World—since the Vietnam War, was a very successful visit. I was ecstatic about the visit, itself, the welcome by the Government of Vietnam, and the outcomes of the visit.

Senator KAINE. If I could, Mr. Chair—I'm over time, but just to comment, sort of, for the committee as much as for Admiral Harris—I don't think anything shows the possibility of American magnanimity in the world more than a picture of the USS *John McCain* docked in Da Nang Harbor or the *Carl Vinson* in Vietnam, the fact that, with a former adversary, where the scar tissues are still very alive in the American public and Vietnam War veterans, this is an adversary that deeply wants a partnership with the United States, just as Japan and Germany deeply wanted partnership with the United States after World War II. That shows that people recognize the United States, for all its imperfections and warts, is still a country with high values and it's still a country that they want to be in partnership with. I think that's a positive sign.

Admiral Harris, thank you for your testimony.

Admiral HARRIS. We are the security partner of choice for many countries, including Vietnam.

Senator KAINE. Thank you, Admiral.

Senator INHOFE. Agreed. Having just returned from viewing the repairs that were taking place on that, I agree with you.

Thank you so much, Admiral Harris.

Before someone else shows up, we're going to adjourn this meeting. And appreciate very much your patience and your service.

[Whereupon, at 11:13 a.m., the committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR DAVID PERDUE

NORTH KOREA SANCTIONS—ADDITIONAL LEVERS

1. Senator PERDUE. Admiral Harris, in your hearing before the House Armed Services Committee last month, you said, quote, "I think what we should be doing is what we are doing, and that is to maintain and increase the pressure campaign run by the State Department, to convince Kim Jong-un that his nuclear ambitions are flawed." In the past year, President Trump has authorized the Treasury to block entities that trade with North Korea from the United States financial system, and imposed sanctions on North Korean military and regime officials, North Korean financial facilitators who prop up the regime with foreign currency earned through forced labor operations, and on Chinese entities that export metals and other goods to North Korea. Additionally, there were numerous United Nations Security Council resolutions passed that restrict North Korean coal, iron, oil, agricultural, and labor exports. However, due to this international pressure campaign, North Korea has upped its sanctions evasion strategy. In Africa, countries like Tanzania and Mozambique are reportedly contracting with Pyongyang to provide support for their air missile systems. Last August, it was uncovered that the Egyptians were buying military munitions from North Korea. China and Russia are estimated to have tens of thousands of North Korean workers, earning over $500 million to Kim Jong-un's regime. Recently, a UN report was released that that unveiled that North Korean technicians helped Assad's forces develop chemical weapons and ballistic-missile technology, and were aided by the Chinese and Russians. Finally, both China and Russia have been found guilty of trading oil and coal with North Korea. It is encouraging to read in your testimony that the international sanctions regime is "changing Kim Jong-un's calculus." However, as you said, quote, "Kim Jong-un continues to channel his reduced resources to weapons programs," and North Korea continues to skirt sanctions. Admiral, I also sit on the Banking Committee, which authorizes new Treasury sanctions. What additional levers in terms of sanctions have we yet to pull that can put additional pressure on North Korea? Is this a matter of authorities or enforcement?

Admiral HARRIS. While I defer to the Treasury Department regarding additional authorities, PACOM works actively with interagency partners and regional allies to aggressively enforce UN Security Council resolutions. To date, the success of this effort supports enforcing the strongest sanctions regime against the DPRK. Over the past year and a half, the United States has significantly increased the actions taken against individuals and entities linked to North Korea's illicit activities, many of which have connections to UN sanctions violations.

2. Senator PERDUE. Admiral Harris, you said in your written testimony, "To Beijing's credit, China has taken significant steps to enforce the various UNSCRs, but Beijing can and should do more." How can we pressure China to become more proactive in enforcing sanctions?

Admiral HARRIS. The United States holds regular meetings with Chinese counterparts to share information on DPRK sanctions evasion that could lead to enforcement actions by the Chinese. In my view, these meetings should continue, but the United States should also consider calling China out publicly when it does not take action on the information provided. Additionally, the United States should consider increasing the application of sanctions against Chinese entities for illicit activities with the DPRK.

3. Senator PERDUE. Admiral Harris, are there additional secondary sanctions on Chinese entities that you believe would be effective?

Admiral HARRIS. While I defer to the Treasury Department on the specifics of secondary sanctions, I believe the U.S. should consider secondary sanctions as part of the application of all instruments of U.S. national power in support of the Maximum Pressure Campaign.

4. Senator PERDUE. Admiral Harris, President Trump said in January that "Russia is not helping us at all with North Korea. What China is helping us with, Russia

is denting. In other words, Russia is making up for some of what China is doing." Can you speak to Russia's role in aiding North Korea in sanctions evasion?

Admiral HARRIS. Direct evidence of Russian Government involvement in sanctions evasion is lacking, but recent activities suggest there may have been some degree of complicity in actions intended to shore up the North Korean regime. For example, numerous reports late last year noted the illicit transfer of oil from Russia to North Korea.

While Russia generally supports limited UN sanctions, Moscow has consistently tried to water-down those sanctions and/or protect Russia's individual interests. During the most recent UN debate, Russia pushed to allow North Korean workers to remain in country for up to two years, an action that assures continued access to cheap North Korean labor despite awareness that a large percentage of the earnings flow back to Pyongyang. Russia also protects Kim Jong-un from justified criticism over his role in raising tensions. Over the past year, Russia's Foreign Ministry has repeatedly decried United States military deployments and exercises on or near the Peninsula as provocative and intended to provoke a North Korean response.

Russia only has limited military relations with North Korea, with no combined training and very limited assistance. I do think, however, that Moscow may see an opportunity to try to re-establish some of the arms sales programs it previously had with Pyongyang.

5. Senator PERDUE. Admiral Harris, how can we combat North Korean sanctions evasion activity more effectively?

Admiral HARRIS. The United States works with partners in the region to ensure the full implementation and strict enforcement of North Korea-related UN Security Council Resolutions. To increase effectiveness, the United States welcomes the support of allies and partners to maintain pressure on the DPRK, and particularly to enforce the maritime-based provisions to prevent illegal exports and disrupt illicit ship-to-ship transfers of petroleum.

6. Senator PERDUE. Admiral Harris, do you support the proposal made by a number of experts, including Admiral James Stavridis, for a maritime task forces to enforce UN sanctions and counter North Korean proliferation activities?

Admiral HARRIS. [Deleted.]

7. Senator PERDUE. Admiral Harris, who are the likely countries that would join the United States in a maritime task force?

Admiral HARRIS. [Deleted.]

8. Senator PERDUE. Admiral Harris, is PACOM examining options for expanded international cooperation in the maritime domain to increase pressure on North Korea?

Admiral HARRIS. [Deleted.]

JSTARS ISR CAPABILITY

9. Senator PERDUE. Admiral Harris, as you know, the Air Force has zeroed-out its FY19 recapitalization of the JSTARS fleet, when just last year this platform was the number 4 acquisition priority of the Air Force. While I agree that we eventually need to move to the new "system of systems" in the future, I'm very concerned we'll see critical gaps in ISR (especially with GMTI—Ground Moving Target Indicator) for you and for troops on the ground. The Air Force is planning to take the JSTARS platform offline without acquiring more ISR assets. Have they explained to you how they plan to bridge the capability gap in GMTI–ISR that will arise in the upcoming 3–12 year period? (If possible, I would appreciate a classified and unclassified response)

Admiral HARRIS. [Deleted.]

10. Senator PERDUE. Admiral Harris, what does this potential gap mean for you and your combatant commands' ISR requirements?

Admiral HARRIS. [Deleted.]

11. Senator PERDUE. Admiral Harris, how well are your ISR requirements being met currently?

Admiral HARRIS. [Deleted.]

12. Senator PERDUE. Admiral Harris, in your experience, what mission-critical capabilities can be met with JSTARS that can't be met with another ISR platform?
Admiral HARRIS. [Deleted.]

13. Senator PERDUE. Admiral Harris, could you provide me an example of a specific mission that you have commanded whose success depended on the JSTARS?
Admiral HARRIS. [Deleted.]

14. Senator PERDUE. Admiral Harris, how important to you, as a combatant commander, is the role of JSTARS airborne battle management and command and control, in addition to being an ISR provider?
Admiral HARRIS. [Deleted.]

CHINA-RUSSIA MILITARY COOPERATION

15. Senator PERDUE. Admiral Harris, Russia and China are displaying the highest level of military cooperation in 3 decades, posing an escalated threat to the United States and its allies. Russia and China show no signs of stopping this level of military coordination for years to come. How does this cooperation stand to threaten United States and allied security objectives in the Asia Pacific?
Admiral HARRIS. While it is true that Russia and China have increased military interaction, the relationship remains highly superficial and there is little evidence of true military integration or interoperability. As such, the threats to U.S. and allied security objectives still predominantly come from each country individually. I do not anticipate the relationship evolving to a point anytime in the near future that would produce integrated or interoperable military forces.

16. Senator PERDUE. Admiral Harris, what are you seeing in the theater? Does Sino-Russian military cooperation threaten current operations?
Admiral HARRIS. No. Russia and China pose substantial military threats on their own, but the current level of cooperation between them does not increase the threat or threaten current operations.
Bilateral military exercises remain limited with the annual naval exercise JOINT SEA as the most noteworthy. Russia and China have held this combined naval exercise annually since 2012, alternating hosting duties each year. JOINT SEA has modestly increased in size and complexity, but still lacks any significant degree of interoperability. I characterize the military cooperation as 'synchronized' as opposed to 'integrated.'
Even so, both Moscow and Beijing incorporate aggressive strategic communications into their relationship, claiming levels of partnership and cooperation that are not supported by exercise design or execution.
Finally, the exercise series does provide both navies access to areas in which they would otherwise not routinely operate. For example, the first phase of the 2017 JOINT SEA took place in the Baltic Sea, which allowed China to demonstrate its growing global capabilities; the 2016 iteration was held in the South China Sea, a non-traditional operating area for the Russian Navy.

17. Senator PERDUE. Admiral Harris, are you responding to this defense coordination between Russia and China? If so, how?
Admiral HARRIS. Russia and China have improved their level of military interaction; however, the relationship remains highly superficial and there is little evidence of true military integration or interoperability. I believe the current level of military activity and engagement in the Indo-Pacific deters aggression from these two competitors and assures our allies and partners of U.S. commitment to their defense and regional stability.

18. Senator PERDUE. Admiral Harris, what are more options for response?
Admiral HARRIS. I view current military cooperation between China and Russia largely as a partnership of convenience at a superficial level to try to counter United States objectives in the region. While the United States has an interest in ensuring China—Russia military cooperation does not evolve toward integration and interoperability. China and Russia are not natural allies.

CHINA-SUBS AND NAVAL ADVANTAGE

19. Senator PERDUE. Admiral Harris, Chinese submarines have deployed to the Indian Ocean seven times in the past 4 years, and Chinese ships have conducted dozens of port visits across Europe, Africa, the Middle East, and Asia. This does not

mean the PLAN has become a global navy, but its presence and influence are expanding. The PLA Navy (PLAN) is in the midst of a massive shipbuilding program. If this program continues, China will surpass Russia as the world's second largest Navy by 2020, when measured in terms of submarines and frigate-class ships or larger. Last year, Admiral Harris, you told this committee that approximately 230 of 400 foreign submarines worldwide are located in the Indo-Asia-Pacific. Of these, 160 belong to China, Russia, and North Korea. And yet, you told us that as a combatant commander, you only gets 50 percent of the submarines you need, based on our 52-submarine force (attack sub force). However, the United States maintains a critical advantage in undersea warfare. What investments is China making to erode this advantage? What is your assessment of how successful these efforts have been?

Admiral HARRIS. Historically, anti-submarine warfare has lagged behind anti-surface and anti-air warfare as a priority for the PLAN. Although anti-submarine warfare remains a relative capability gap, recent new-construction classes are equipped with a variety of new sonar systems, including towed arrays and variable-depth sonars, as well as hangars to support embarked helicopters. These helicopters are fitted with search radars, dipping sonar, sonobuoys, torpedoes, and depth charges. The anti-submarine warfare variant of the Y–9 fixed wing aircraft is equipped with a magnetic anomaly detector boom and a large surface search radar. Recent exercises suggest the PLAN has strengthened its training cycle and has made some progress in deep water anti-submarine warfare. The PLAN conducts complex multi-discipline warfare training throughout the year, and the scope of naval training has broadened to include more robust anti-submarine warfare.

20. Senator PERDUE. Admiral Harris, is China on course to surpass the United States Navy in the same terms? If so, when?

Admiral HARRIS. I believe that China will not surpass the United States Navy in the next several years. However, I expect to see a consistent erosion of United States advantage in this domain as China fields new and better capabilities, integrates them into a coherent system of systems, and trains to more effectively operate them. This assessment should generate a sense of urgency to maintain and improve U.S. undersea capabilities—a critical advantage that our nation must retain.

That said, United States and Chinese naval capabilities do not easily support direct comparison. For example, China's submarine force is very different from that of the United States Navy, but has characteristics well suited for its more limited mission set. Most of China's submarine force is conventionally powered, with anti-ship cruise missiles, but without towed arrays. These submarines are optimized for regional missions that concentrate on anti-surface warfare near major sea lines of communication. China's small nuclear attack submarine force is more capable of operating further from the Chinese mainland; conducting intelligence, surveillance and reconnaissance; and anti-surface warfare missions. Finally, China's submarines lack optimization for two missions at the core of the United States submarine force: anti-submarine warfare and land attack.

BURMA (MYANMAR)—ROHINGYA GENOCIDE

21. Senator PERDUE. Admiral Harris, since clashes in Rakhine broke out between the Rohingya and the Burmese military in last August, more than 688,000 Rohingya Muslims have fled Burma's Rakhine State to escape the military's campaign of ethnic cleansing. Many of these refugees fled to Bangladesh. The atrocities committed by Burmese security forces, including mass killings, sexual violence, and widespread arson, amount to crimes against humanity. Secretary Mattis said, "This is a tragedy that's worse than anything that CNN or BBC has been able to portray about what has happened to these people." What are your views on the terrible atrocities that are ongoing in Burma?

Admiral HARRIS. USPACOM views the atrocities in Burma as tragedy and a major setback and ongoing challenge in democracy for the Aung Sang Suu Kyi (ASSK) administration. Lack of civilian control of the military will continue to plague ASSK's efforts to stabilize and control military actions throughout Burma. This atrocity will have a long lasting effect impacting the ability to conduct military to military engagements.

22. Senator PERDUE. Admiral Harris, has PACOM played any role in facilitating aid to dispersed Rohingya refugees?

Admiral HARRIS. USPACOM monitored the situation from the onset and stayed in constant communication with the United States Embassies in both Burma and Bangladesh. USPACOM remains ready to support at the request of the Department of State and direction from the Department of Defense. To date, no request has been

made, and United Nations and Non-Governmental Organizations are facilitating the dispersal of aid. USPACOM did conduct bilateral engagements with Senior Government Officials in Bangladesh and Thailand encouraging support for the refugees.

23. Senator PERDUE. Admiral Harris, how has this refugee crisis affected stability in that region?

Admiral HARRIS. The Rohingya crisis has strained Burma's political relations with regional countries and increased tensions between Bangladesh and Burma. In the long-term, the large influx of Rohingya could create instability in southeastern Bangladesh due to tensions between the refugees and local population over competition in the informal labor market, rising food prices, and environmental degradation. The lack of sustainable employment opportunities for the Rohingya and protracted delays in the repatriation process could also exacerbate these tensions.

The approaching summer monsoon season in South Asia will place significant additional stress on the displaced Rohingya. Severe weather is likely to increase disease, worsen living conditions, and complicate already insufficient sanitation systems. International pressure on the Governments of Bangladesh and Burma will almost certainly increase. In short, an already difficult situation will become even more difficult.

CHINESE INVESTMENT IN US–CFIUS REFORM

24. Senator PERDUE. Admiral Harris, gaps in the CFIUS process have allowed China to weaponize investment to achieve the back-door transfer of dual-use United States technology and related know-how, aiding China's military modernization and jeopardizing the ability of the United States to maintain its overall military advantage. CFIUS was not designed to stop investment-driven technology transfers, and many such transactions are occurring today, carefully designed to sidestep CFIUS' limited jurisdiction. Nor does CFIUS currently cover real estate transactions near military bases (or other sensitive national security facilities), which could pose a risk to national security. I also sit on the Banking Committee, which oversees this matter, so what is your view on CFIUS and do you believe we need reforms?

Admiral HARRIS. Existing and emerging technologies are vital to maintaining our technological edge and military superiority. The CFIUS process is absolutely essential to protecting our defense technologies, military capabilities, and critical infrastructure. I likewise fully support the pending Foreign Investment Risk Review Modernization Act (FIRRMA) legislation. I'm pleased to see that the interests and concerns of the security community are increasingly represented in the CFIUS process, and that FIRRMA strengthens the process. I particularly appreciate the intent of FIRRMA to broaden the scope to include review of real estate transactions in close proximity to military facilities. I believe continuing to increase DOD's voice in the CFIUS process will help realize the intent of CFIUS and FIRRMA.

25. Senator PERDUE. Admiral Harris, what threats currently exist with Chinese investment in the United States?

Admiral HARRIS. The United States has an open economy that is the largest in the world and the top destination for foreign investment. It attracts investment from all over the world, including China. It's only natural that China, as the world's second-largest economy, wants to increase investment in the United States. However, Beijing does not give our firms reciprocal access to its markets, which stifles fair and productive competition.

Additionally, Beijing exploits United States open markets to promote its own strategic interests at the expense of ours and those of our allies and partners. The Chinese Communist Party has an unparalleled willingness and ability to leverage its economy for its own ends. It uses both private and state-owned Chinese companies and investors to advance the objectives of its overarching strategy to "rejuvenate the Chinese nation." When a Chinese entity seeks to invest in a strategic sector in the United States, it is often unclear at the outset if it is simply an ordinary business transaction, or if it is being undertaken in service of the regime. Often, the drivers are mixed. In many cases, Chinese investments enable regime goals at odds with United States interests in several key areas. First, China seeks to build a "world-class military" and uses extensive theft, absorption, and purchase of United States technology and expertise to advance its military modernization. Second, Beijing seeks to reshape international laws, regulations and technology standards to better align with China's political model and the authoritarian tools that accompany it.

26. Senator PERDUE. Admiral Harris, has China, in your view, been weaponizing investment?

Admiral HARRIS. I believe China has weaponized investment. As I noted previously, the Chinese Communist Party has an unparalleled willingness and ability to leverage economics—including Chinese overseas investments—to serve regime objectives. China seeks to build a "world-class military" capable of deterring the United States and its allies, winning should conflict occur, and diminishing U.S. presence in the Indo-Pacific. In pursuit of this aim, Beijing institutes practices, such as "military-civilian integration," that transfer advanced technologies and exquisite expertise acquired via licit and illicit access to United States private sector and research institutions to make the Chinese military more capable and lethal. China also frequently attaches political strings to its overseas trade and investments—turning on and off its economic spigots, or threatening to do so, to persuade recipient countries to comply with Beijing's demands.

QUESTIONS SUBMITTED BY SENATOR SENATOR BEN SASSE

ARTIFICIAL INTELLIGENCE AND INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE (ISR)

27. Senator SASSE. Admiral Harris, in your prepared statement, you said you are concerned about China's investment in artificial intelligence (AI). You wrote that the Indo-Pacific requires, "persistent and intrusive ISR to provide indications, warning, and situational awareness across a vast geographic area" and that our "ISR capabilities must be suited to our unique operating environment." Presumably, China has reached the same conclusions about the value of ISR in the region. Have you seen any indications that China is leveraging its AI investments to close the ISR capability gap?

Admiral HARRIS. China is clearly researching and considering how AI can be used to improve development and use of ISR capabilities (satellites, unmanned aerial systems, reconnaissance aircraft, etc.). China released its New Generation Artificial Intelligence Development Plan in July 2017 which articulated its ambition to lead the world in AI by 2030. Some of the concepts could be used to enable better, "smarter" ISR operations include intelligent and autonomous unmanned systems (such as swarm intelligence), AI-enabled data fusion, information processing, intelligence analysis, and intelligent support to decision making. China has pursued closer civil-military focus for AI, institutionalizing the relationship between cutting edge research efforts and military requirements.

28. Senator SASSE. Admiral Harris, how are we using AI to maintain or grow our ISR advantage in the Indo-Pacific?

Admiral HARRIS. [Deleted.]

CYBER PARTNERSHIPS WITH ALLIES

29. Senator SASSE. Admiral Harris, in your prepared statement you noted, "the two most capable cyber actors worldwide are Russia and China. Both of these countries have incorporated cyber into their joint warfighting doctrine and routinely exercise these capabilities alongside more traditional elements as a force multiplier. In fact, China values cyber so highly it created the Strategic Support Force to integrate and synchronize cyber operations." The 2018 National Defense Strategy aims to Compete, Deter, and Win alongside allies and partners. In the context of the cyber domain, how is PACOM aligning itself with allies and partners in the Indo-Pacific?

Admiral HARRIS. [Deleted.]

30. Senator SASSE. Admiral Harris, do any of our treaty allies and partners in the Indo-Pacific have offensive cyber capabilities? If so, are they using them?

Admiral HARRIS. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR KRISTIN GILLIBRAND

KOREAN PENINSULA

31. Senator GILLIBRAND. Admiral Harris, at the end of February, media reported on an unreleased UN report claiming that North Korea has been shipping acid-resistant tiles, valves, and other chemical weapons-making supplies to the Syrian Government, as well as providing technicians that have been spotted working at chemical weapons and missile facilities inside Syria. According to reports, these

shipments have gone on for a number of years, and ties between North Korea and Syria go back decades. In our CENTCOM hearing earlier this week, General Votel noted in his statement that "For decades, North Korea widely proliferated ballistic missile expertise and materials to a number of actors, including Iran and Syria." What can we do to better prevent North Korea from providing this illicit aid to the Syrian Government, and how can we prevent Syrian funds from enriching the Kim regime?

Admiral HARRIS. [Deleted.]

32. Senator GILLIBRAND. Admiral Harris, does the fact that this illicit trade continues reflect a failure to detect North Korea shipments, or an inability to interdict them?

Admiral HARRIS. [Deleted.]

33. Senator GILLIBRAND. Admiral Harris, what role, if any, has China played with regard to stopping this trade?

Admiral HARRIS. With regard to impeding the movement of personnel associated with missile or WMD programs, China acts when provided with evidence associating individuals with proscribed activities or when individuals have been 'designated' by a sanctioning entity. However, China's enforcement of its domestic export control laws and international nonproliferation commitments is inconsistent. North Korean proliferation entities often use China's large role in global commercial markets to mask their illicit activity among legitimate trade transactions. The combination of weak Chinese enforcement and North Korean deception techniques presents a persistent challenge to United States and allied counter proliferation efforts.

QUESTIONS SUBMITTED BY SENATOR RICHARD BLUMENTHAL

DIPLOMACY

34. Senator BLUMENTHAL. Admiral Harris, would you agree that we must strengthen our diplomatic arm of our efforts to address North Korea's nuclear ambitions? How have key diplomatic vacancies impacted your efforts?

Admiral HARRIS. PACOM continues to support the Maximum Pressure Campaign, which has exerted an unprecedented level of pressure on North Korea to denuclearize. While the top United States diplomatic post on the Korean Peninsula has remained vacant for some time, this is being rectified. I believe that United States Government priorities and security interests are well represented and carried out in the Korean Peninsula. The State Department's Charge d'Affaires at the embassy in Seoul is a long-time Foreign Service Officer who has a strong relationship with the Republic of Korea. Furthermore, Secretary Pompeo's May 15 lifting of the State Department's hiring freeze will give the domestic bureaus and missions overseas the ability to fill essential positions vacated after December 31, 2017, to further advance U.S. foreign policy goals.

35. Senator BLUMENTHAL. Admiral Harris, the New York Times reported recently that satellite imagery indicates North Korea may be making new nuclear bomb fuel. What can you tell us about the activity at the reactor site?

Admiral HARRIS. [Deleted.]

NORTH KOREA STRATEGY

36. Senator BLUMENTHAL. Admiral Harris, the FY18 NDAA required the President to produce a North Korea strategy within 90 days of the legislation becoming law. We have hit the deadline, yet no strategy has been produced. Are you aware of this strategy required by the most recent NDAA? Have you been consulted? Do you know when we will see the strategy?

Admiral HARRIS. Yes, I am aware of the requirement in the FY 2018 NDAA. PACOM has provided input and support via the Joint Staff and the Secretary's staff. I defer to the White House and the office of the Secretary of Defense (OSD) on the timing of the release.

SUBMARINES

37. Senator BLUMENTHAL. Admiral Harris, both Russia and China are modernizing their submarine fleets. As you testified before this committee both last and this year, "potential adversary submarine activity has tripled from 2008 levels, requiring an increase of U.S. activity to maintain undersea superiority." Can you pro-

vide an update on our capabilities, as well as our adversaries' progress? How advanced are their anti-submarine warfare capabilities?

Admiral HARRIS.

United States: No country can match our ability to operate under the sea, but that is a perishable advantage that China and Russia are working to close. Therefore, we must continue to resource the undersea warfare capabilities that reside in the Navy today. We must also continue investments in our submarine and anti-submarine warfare forces, such as the *Virginia*-class SSN's and Mk-48 torpedoes. If we don't, China and Russia will close that gap.

Russia: Although the Russian Federation Navy is mainly made up of Soviet-era surface ships and submarines, an extensive modernization program is underway, focusing first on the submarine force. The Russian Pacific Fleet has received two *Dolgorukkiy* SSBNs, will eventually receive *Severodvinsk* SSGNs, and a new fifth-generation general purpose nuclear-powered submarine is under development. The IL–38 MAY Maritime Patrol Aircraft has undergone numerous updates over the decades. The latest operational development concerns the IL–38N (Novella) variant that received an upgraded anti-submarine warfare system installation.

China: The Chinese People's Liberation Army Navy (PLAN) is rapidly retiring legacy combatants in favor of larger, multi-mission ships equipped with advanced anti-submarine weapons and sensors. The PLAN remains engaged in a robust surface combatant construction program; the latest ships are anti-submarine warfare variants with towed-array sonars. The PLA is making gradual progress in the undersea domain but continues to lack a robust deep-water anti-submarine warfare capability.

38. Senator BLUMENTHAL. Admiral Harris, you note your support for the Navy's 2016 Force Structure Assessment that included an increased attack submarine requirement—from 48 to 66. Last month, the Navy released its FY19 Shipbuilding Plan, which considers building not only two attack submarines per year for the next 30 years, but possibly three per year in some years (FY21, 22, 25 at the earliest) to reach the 66 requirement sooner than the late 2040s. Would you support this? How would such an acceleration help PACOM?

Admiral HARRIS. [Deleted.]

39. Senator BLUMENTHAL. Admiral Harris, what more can we do in terms of our submarine fleet to ensure that we remain able to mitigate any maritime threat in the Pacific?

Admiral HARRIS. SSNs remain one of my top three readiness concerns along with critical munitions and fifth generation fighters. The SSN inventory stands at 52 but in the 2020s it will drop to the mid-40s. Additional investments made today will help fill tomorrow's requirements. So, I fully support the procurement of the 3rd Virginia Class SSN and additional Mk-48 torpedoes. The U.S. should also consider life extension programs for a number of later model Los Angeles Class SSNs. No country can match our ability to operate under the sea, but if we don't continue to resource undersea warfare capabilities, China and Russia will close that gap.

PACIFIC COLLISIONS

40. Senator BLUMENTHAL. Admiral Harris, we were all very saddened and concerned by the multiple maritime mishaps in 2017 in the Pacific that led to the death of 17 sailors, including two from Connecticut. What was your involvement with the Navy's review of the fatal collisions? Did you provide input for the reviews that were conducted?

Admiral HARRIS. I had no involvement with the Navy's review of the fatal collisions.

41. Senator BLUMENTHAL. Admiral Harris, following these tragedies, what steps have you taken to improve operations?

Admiral HARRIS. As the PACOM Commander I supported the Navy's efforts to improve readiness for all Pacific Fleet naval forces.

42. Senator BLUMENTHAL. Admiral Harris, how has the loss of two U.S. destroyers equipped with the Aegis ballistic missile defense system impacted PACOM's ability to carry out its mission?

Admiral HARRIS. The Navy mitigated the loss of the two Aegis Ballistic Missile destroyers through a homeport shift of one destroyer (USS *Milius*) from San Diego to Japan, and a change in the rotational deployment of USS *O'Kane* from CENTCOM to PACOM. To cover CENTCOM, the Navy deployed an additional Aegis

ship from the east coast. PACOM experienced minimal impact to meeting its assigned missions.

43. Senator BLUMENTHAL. Admiral Harris, as I understand that no replacement ships have been sent to the Pacific, how has this impacted the operational tempo of those ships and sailors required to fill the gaps?

Admiral HARRIS. The Navy mitigated the loss of the two Aegis Ballistic Missile destroyers through a homeport shift of one destroyer from San Diego to Japan, and a change in the rotational deployment of another destroyer from CENTCOM to PACOM. These actions allowed the operational tempo for PACOM's forward deployed ships to remain constant while focused on improving readiness and supporting operational requirements.

NORTH KOREA CYBER REVENUE

44. Senator BLUMENTHAL. Admiral Harris, North Korea's cyberattacks are estimated to provide the regime with as much as $1 billion per year—a staggering figure equivalent to one-third of the country's exports. What are you doing to blind North Korea's cyber capabilities to prevent the regime from continuing to launch offensive cyber operations that provide illicit revenue for their nuclear weapons program?

Admiral HARRIS. [Deleted.]

45. Senator BLUMENTHAL. Admiral Harris, last month, the Administration announced its largest tranche of sanction designations against North Korea, yet this did not focus on their cyber activity. Do you agree that we must do more to make North Korea pay a steeper price?

Admiral HARRIS. Yes. The Administration has focused on North Korea's nuclear and ballistic missile activities with the State Department-led Maximum Pressure Campaign synchronizing all instruments of United States national power—including diplomatic overtures, economic sanctions, and continued military readiness—combined with the efforts of the international community. PACOM fully supports the Maximum Pressure Campaign with military activities and capabilities. While these whole of United States Government and international efforts have contributed to Kim Jong-un's recent willingness to negotiate denuclearization, North Korea's cyber activity has changed very little.

46. Senator BLUMENTHAL. Admiral Harris, in December, DHS officially attributed the WannaCry attack that impacted over 300,000 victims in 150 countries to the North Korean Government. While attribution is important, it is not sufficient. Do you agree that North Korea must pay a steeper price for its cyberattacks? Do you agree that our actions so far have not made North Korea realize that they have more to lose than gain with their behavior?

Admiral HARRIS. Yes to both questions. Deterring malicious cyber activity is a difficult challenge, especially with North Korea, a country that does not accept or honor international rules and laws. United States Government actions to date have not deterred North Korea from conducting these types of malicious cyber activities. I believe that cyberattacks against the U.S. should result in consequences for the actor. The United States should employ a whole-of nation approach, in conjunction with allies and partners, to change North Korea's decision calculus about the cost of continuing its malicious cyber activity.

47. Senator BLUMENTHAL. Admiral Harris, North Korean hackers often operate from abroad, notably in China as they rely on its internet structure. What should be done to pressure China and others to crack down on North Korean hackers and prevent North Korea from accessing their networks?

Admiral HARRIS. The United States should consider publishing timely reports of North Korean malicious cyber activity originating from abroad to convince China and others to crack down on these hackers and deny access to their networks. This will likely require establishing new and responsive processes to develop interagency consensus and crafting appropriate exceptions to national disclosure policies. If the U.S. can empower the international community with timely and relevant knowledge of such internet use, all countries stand to benefit from broader leadership to influence and potentially eliminate this malicious activity.

QUESTIONS SUBMITTED BY SENATOR JOE DONNELLY

CONVENTIONAL PROMPT STRIKE

48. Senator DONNELLY. Admiral Harris, it is my understanding that PACOM—alongside STRATCOM and EUCOM—has identified the development and fielding of a Conventional Prompt Strike system as a high priority. Is that correct and, if so, can you elaborate on that need?

Admiral HARRIS. [Deleted.]

49. Senator DONNELLY. Admiral Harris, in your view, what are the tradeoffs between a land-based versus a sea-based capability?

Admiral HARRIS. [Deleted.]

QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

JOINT INTERAGENCY TASK FORCE-WEST (JIATF–WEST)

50. Senator HIRONO. Admiral Harris, Congress has made changes over recent years on how the U.S. military works with its allies. This includes efforts to streamline security cooperation, and how the military contributes to the fight against illicit drug trafficking. Within your area of responsibility (AOR) are countries which produce and export products which go into the production of illicit drugs as well as final products themselves. This includes products contributing to our opioid epidemic. I am interested in determining if changes to security cooperation rules have impacted the operations and effectiveness of the Joint Interagency Task Force West to work with our allies in combatting the flow of illicit precursor and final products.

Can you provide a brief status on how JIATF–West is doing to combat illegal drug operations, such as those related to Chinese produced Fentanyl which get sent to our country?

Admiral HARRIS. JIATF West works in concert with foreign law enforcement and the U.S. interagency to identify and disrupt drug threats. Main focus areas include conducting partner capacity building programs, sharing intelligence, and assisting in the coordination of foreign partner interdiction efforts. JIATF West's counter fentanyl activities directly support ongoing U.S. law enforcement cases conducted by Homeland Security Investigations and the Drug Enforcement Administration. This work has primarily served to identify Chinese manufacturing and shipping networks, contributing to investigations of specific producers, vendors and distributors within China.

51. Senator HIRONO. Admiral Harris, how have congressional security cooperation changes impacted JIATF–West in doing its job, specifically focusing on second or third order negative effects? This includes things that have helped or hindered operational effectiveness and timeliness. Would you recommend and modifications to existing laws and regulations which would improve the abilities of JIATF–W in conducting its missions?

Admiral HARRIS. Changes to security cooperation promulgated through the fiscal year 2017 and fiscal year 2018 National Defense Authorization Acts have reduced JIATF West's ability to engage and train partner nation law enforcement. Specifically, the new authorities have made it problematic to conduct long-term budgetary planning. Previously, the DOD Counternarcotics (CN) community could rely upon the predictability of dedicated funds in the DOD CN appropriation for train and equip activities which enabled long-term planning. The new security cooperation authorities require the DOD CN community to compete annually for Defense Security Cooperation Agency funds to conduct these activities, with uncertainty in the resultant funding outcomes. This uncertainty limits JIATF–West's ability to build enduring partnerships and effectively increase partner capacity/capability over the long term.

I recommend amending 10 USC § 333 to allow funding of CN train and equip activities using DOD Drug Interdiction and Counter-drug Activities, Defense.

ENERGY RESILIENCE-FUEL AND ELECTRIC SUPPLY VULNERABILITIES

52. Senator HIRONO. Admiral Harris, there are concerns of the threats posed by our adversaries in the Indo-Pacific region to disrupt our ability to deliver fuel or electricity in support of PACOM's mission. In the region, DOD relies on vulnerable fuel and electric supplies to conduct its military operations, where power outages on military installations or fuel supply disruptions could hinder DOD's ability to

conduct critical military operations. In your testimony, you state that we must ensure we have the right fuel, in the right amount, at the right location, at the right time, for PACOM to project power throughout the Indo-Pacific under combat conditions.

Can you discuss the capabilities of China and Russia to disrupt our electric or fuel supplies in the Indo-Pacific region? Are we prepared to respond, and how?

Admiral HARRIS. U.S. adversaries have the capability to disrupt the flow of fuel and potentially electric supplies. Additionally, the U.S. operates fuel systems that may be vulnerable to disruption through a loss of power. However, these systems have redundant capabilities, such as back-up power sources and manual operating systems, which mitigate the impact of a power loss.

PACOM has sufficient fuel capacity in theater to support forces for contingency operations. However, the strategic placement of fuel stocks and the availability of commercial shipping to deliver it present concerns in a contested and denied environment. Annually, PACOM evaluates OPLAN requirements with the Defense Logistics Agency to ensure strategic fuel reserves and the global fuel market can meet the demand of contingency forces.

53. Senator HIRONO. Admiral Harris, based on expected growth in military capabilities in the Indo-Pacific region, do you believe we are appropriately planning for the growing energy demands in the region? What can be done better to ensure energy demands are met and will even be met during a contingency?

Admiral HARRIS. PACOM plans for the growing energy demands in the region, but has some significant challenges. I view bulk fuel as the most critical commodity to sustain operations. In planning for contingencies, PACOM assumes the loss of access to fixed forward fuel reserves, which makes PACOM forces dependent on bulk fuel deliveries originating outside of the second island chain. This places a greater reliance on commercial tankers and the capability to distribute fuel from the tankers to other at-sea platforms or to locations on land. To ensure the ability to meet future energy demands to sustain operations, the U.S. should grow the number of combat refueling ships and expand the capability to move bulk fuel from commercial tankers to combat ships and ashore.

CHINA/RUSSIA: MILITARY MODERNIZATION

54. Senator HIRONO. Admiral Harris, in your testimony, you state that China's provocative and destabilizing actions in the South China Sea continue unabated. That, China's historically unprecedented economic development has enabled an impressive military buildup that could soon challenge the United States across almost all domains. You specifically express concern that the PLA Navy (PLAN) is in the midst of a massive shipbuilding program. And that if this program continues, China will surpass Russia as the world's second largest Navy by 2020, when measured in terms of submarines and frigate-class ships or larger.

Admiral Harris, can you quantify the naval threat and capabilities of China and, for that matter, Russia in the Indo-Pacific region?

Admiral HARRIS. With more than 300 ships, the PLA Navy is the largest in Asia. The PLAN has undergone a rapid shipbuilding and modernization program over the past decade, which has replaced older ships and submarines with more modern and capable platforms, many of which employ anti-air and anti-ship missiles that are among the best in the world. With over 20 advanced destroyers, over 90 frigates or corvettes, and nearly 60 attack submarines, the PLA Navy can maintain persistent presence throughout the adjacent seas and project substantial maritime power throughout the region. China currently operates one developmental aircraft carrier. The second carrier has begun early-phase sea trials and could reach initial operational capability as early as late 2019.

Over the past decade, the PLAN has steadily expanded its operating areas, number of days spent at sea, and scale and complexity of training. Not only is the PLAN getting bigger, it is also getting better.

Though Russia's navy is large, the Russian Pacific Fleet (RUSPACFLT) in the Indo-Pacific region is relatively small compared to its neighbors' navies. For example, Russia has only, at most, seven major combatants available for operations in the Pacific. These ships include one cruiser, one guided missile destroyer, four anti-submarine destroyers and one new frigate. Russia also has two of the new Dolgorukiy SSBNs and is slated to receive two more.

Modernization is ongoing and will significantly improve the RUSPACFLT capabilities. Russia is slated to receive eight new frigates by 2025, and six new KILO-class diesel submarines. These vessels will be equipped with the Kalibr cruise mis-

sile weapons system—the same type Russia used to launch cruise missiles into Syria and which pose a significant threat to land targets, ships and submarines.

55. Senator HIRONO. Admiral Harris, in your opinion, what recommendations would you offer to counter the naval threat China and Russia pose in the region? Are future authorizations needed to counter this threat?

Admiral HARRIS. [Deleted.]

ANTI-SUBMARINE WARFARE (ASW) CAPABILITIES

56. Senator HIRONO. Admiral Harris, your written testimony describes significant advances in the capabilities and quantities of China's submarine force as well as the modernization of Russian submarines. In the past, the Navy based several squadrons of P–3s at Barber Point and later at Kaneohe Bay. Once the successor aircraft, the P–8, began operations, decisions were made with a significant emphasis on efficiencies to move a vast majority of P–3s to Florida and Washington State. There is a plan to keep two P–8s in Hawaii, along with rotational crews. Further, the current and future submarine threats from China and Russia will also be primarily located within the Indo-Pacific.

Should the Navy and PACOM take a fresh look at the basing of P–8s, given our primary threats will be in the Indo-Pacific, and to allow the P–8 fleet to be timely, responsive, and agile to satisfy PACOM's intelligence, surveillance, and reconnaissance (ISR) and ASW requirements?

Admiral HARRIS. [Deleted.]

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, MARCH 20, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

UNITED STATES STRATEGIC COMMAND

The committee met, pursuant to notice, at 9:24 a.m. in Room SH–216, Hart Senate Office Building, Senator James M. Inhofe presiding.

Committee members present: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Cruz, Sasse, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Kaine, King, Heinrich, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Our meeting will come to order.

The committee today is meeting to hear testimony on the posture of the U.S. Strategic Command, and we welcome our witness, General Hyten, Commander of STRATCOM.

The Trump Administration's National Defense Strategy prioritizes the reemergence of long-term strategic competition. Nowhere is this reality more evident than in Russia and China intensifying their efforts in the nuclear, cyber, and space domains, which are a focus of a Strategic Command mission.

The Nuclear Posture Review released last month orients our nuclear enterprise to address these strategic competitors. The NPR [Nuclear Posture Review] offers continuity in the U.S. nuclear modernization efforts and wisely advocates developing additional capabilities to achieve our fundamental goal of nuclear deterrence.

Our potential adversaries are not standing still. In his recent state of the nation address, Putin unveiled new nuclear weapons, including heavy, mobile ICBMs [Intercontinental Ballistic Missiles] and hypersonic glide vehicles. Meanwhile, Russia's continued violations of both the INF [Intermediate-Range Nuclear Forces] and Open Skies treaties threaten to undermine strategic stability.

Then there is China. China is rapidly expanding its missile forces, including development of new ICBM capabilities and advanced ballistic missile submarines. It recently developed a new

nuclear capable strategic bomb, achieving a nuclear triad for China.

Beyond our strategic competitors threats from North Korea and Iran persist. In particular, recent North Korean missile tests suggests that they are capable of striking the Homeland with an ICBM. I would say I am more optimistic now about North Korea than I was just a short while ago. I think our response to North Korea's threat was one that actually produced some good results. So I think that right now I really believe that the meeting is going to take place with Kim Jong-un and our President.

Russia and China are also increasingly active in space, intent on challenging our domain superiority to achieve an asymmetric advantage. Both countries invested significant resources in anti-satellite ISR [intelligence, surveillance and reconnaissance], direct energy, jamming, and cyber capabilities. We have got to do more to meet these challenges.

Thank you for being here, General Hyten.

Senator Reed?

STATEMENT OF SENATOR JACK REED

Senator REED. Well, thank you very much, Mr. Chairman.

General Hyten, thank you for your service to the country and for testifying on the posture of the United States Strategic Command as we prepare for the fiscal year 2019 National Defense Authorization Act.

I would like to hear from you about a number of topics based on your office call with me last week. Thank you again for making time.

First and foremost is the Administration's Nuclear Posture Review. It adopts many of the same premises as the 2010 posture review that we will not use nuclear weapons against nations in good standing under the Nuclear Nonproliferation Treaty, but we always reserve the right in cases of extreme circumstances to use nuclear weapons. It affirms the importance of nonproliferation but places an emphasis on the changed threat conditions that exist today versus 2010. It reaffirms the importance of the 2010 review and modernizing the triad of delivery platforms and weapons and their nuclear command, control, and communication, or NC3 systems. But it also proposes two supplemental systems: a low-yield submarine-launched ballistic missile and a sea-based cruise missile which was dropped in the 2010 posture review because it was not being deployed and maintained. I am referring to the sea-based cruise missile.

While I agree with much of the NPR, I have concerns about the low-yield submarine-launched warhead. It is my understanding that this system is in response to Russia's military doctrine of using a small-yield nuclear weapon as a means to escalate to deescalate or escalate to win a conventional conflict. The Russian doctrine of escalate to deescalate could easily spin out of control if our response to their low-yield weapon is to use a similar one which could escalate into exchange of larger weapons. We have to devote considerable effort to war-gaming this problem and ensure that existing systems, both conventional and nuclear, cannot meet this doctrinal challenge of escalate to deescalate.

In any case, such a proposal certainly opens up a debate of deeply held opinions. While this debate may be important to have—I think it is important to have, indeed—I worry that it may disrupt the bipartisan consensus that presently ensures the modernization of the triad and NC3 system. This process will take decades and I believe it should be our highest priority and sole focus.

Beyond the nuclear mission, General, you also have an increasingly important space mission. I realize much of this is classified, but it is imperative that you communicate in an appropriate format what this budget request proposes and how it addresses the threats we face.

You are also responsible for synchronizing global missile defense plans and operations. I would like to hear your thoughts on the state of our Homeland and regional systems, how we need to improve reliability and address advancing threats.

Your command is also responsible for spectrum operations and electronic warfare. I would like to know what your command has been advocating to make this integrated effort across the Department of Defense.

Strategic Command, as its name implies, is about deterrence with near-peer competitors. Today, deterrence is a seamless continuum between land, sea, air, electronic spectrum, and space. You have many issues on your plate, and I look forward to your testimony.

Thank you very much, sir.

Senator INHOFE. General Hyten, you are recognized for an opening statement. Your entire statement will be made a part of the record.

STATEMENT OF GENERAL JOHN E. HYTEN, USAF, COMMANDER, UNITED STATES STRATEGIC COMMAND

General HYTEN. Thank you, Senator Inhofe, Ranking Member Reed, members of the committee. I am honored to be here today in a continuing privilege for me to represent the 184,000 Americans, the 184,000 men and women performing the missions of U.S. Strategic Command every day.

I want to start by thanking you for your enduring support to our nation's defense.

As we sit here today, it is important to note that the appropriations bill funding our military is still awaiting full approval by the Congress. Passage of this bill is essential in ensuring our Department maintains the ability to field the most lethal, capable, and resilient military in the world. I remain optimistic that Congress will pass this bill as the existing continuing resolution expires this Friday. Reliance on continuing resolutions in lieu of stable budgets delays mission-critical modernization, degrades troop morale, and impedes readiness recovery. But I am grateful for this committee's continued support. But timely budgets are essential in order to ensure our all volunteer force remains fully trained and equipped to address the nation's existing and emerging future threats.

The first and most important message I want to deliver today is that the forces under my command are fully ready to deter our adversaries and respond decisively should deterrence ever fail. We are ready for all threats. No one should doubt this. We just have

to make sure that the future STRATCOM commanders that come after me will always be able to make this statement.

STRATCOM is a global warfighting command. We set the conditions across the globe as the ultimate guarantor of our national and allied security. Our forces and capabilities underpin and enable all other joint force operations. STRATCOM forces are dispersed across the globe, under the sea, on the land, under the land, in the air, across cyber and into space. 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 still cyberspace operations until Cyber Command is elevated.

Today, our country is challenged by multiple adversaries with an expanding range and capabilities available to them. To maintain military superiority in this multipolar, all-domain world, we must out-think, out-maneuver, our-partner, and out-innovate our adversaries. Deterrence in the 21st Century requires the integration of all our capabilities across all domains, enabling us to respond to adversary aggression anytime anywhere.

The bedrock of our nation's deterrence continues to be our safe, secure, ready, and reliable nuclear triad. The surest way to prevent war is to be prepared for it, and while the current triad continues to provide the backbone of our national security, we will eventually consume the last remaining margin from our investments made during the Cold War. And our modernization programs are critical and include the B–21 bomber, the *Columbia*-class ballistic missile submarine, the ground-based strategic deterrent, the long-range standoff cruise missile, nuclear command and control, and life-extended nuclear warheads, which will provide, without a doubt, the nuclear deterrent capability that our nation needs now and well into the future.

The recently completed 2018 Nuclear Posture Review reinforces and clearly defines longstanding national objectives regarding nuclear weapons. From a warfighter perspective, there is important consistency between the 2018 NPR and its predecessor. The biggest difference, as with the recent National Defense Strategy, is the return to threat-based planning and response to great power competition. We started the NPR with assessment of the threat—it was all about the threat—and based our approach on what our adversaries are doing today and the increasing challenges of the future. We have to remember the strategic environment is dynamic. It changes constantly. And our approach to deterrence must be equally dynamic to address these evolving threats.

STRATCOM truly is a global warfighting command, and the strength of its command is its people. The soldiers, sailors, airmen, marines, civilians of this enterprise have the most important mission in our entire Department and our entire nation. Their hard work and dedication 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 well today and into the future.

So I thank you for the opportunity to be here, and I look forward to your questions.

[The prepared statement of General Hyten follows:]

PREPARED STATEMENT BY JOHN E. HYTEN

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 United States 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 United States 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 United States 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 United States 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, outmaneuver, 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 United States 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 capa-

ble 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 percent 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 con-

flict. 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–52s 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, un-locatable 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 spec-

trum 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 . . .

Senator INHOFE. Thank you.

When a quorum is present, we are going to shift over and do some confirmations, a brief interruption.

As you heard the opening statements from both Senator Reed and myself, there is little difference of opinion in terms of low-yield capabilities. Both China and Russia have a robust nuclear arsenal and a triad of delivery systems, as you said in your opening statement. I think that China and Russia are identified a little differently than the rest of the threats. I think General Dunford said it the best way. He said we are losing our qualitative and quantitative edge.

The 2018 Nuclear Posture Review calls for the development of a low-yield nuclear weapon in the range of approximately 10 kilotons to counter Russia's tactical nuclear weapons, weapons that are not controlled by New START [Strategic Arms Reduction Treaty].

Now, when you talk about 10 kilotons, sometimes we have to remember what is a kiloton. I think Hiroshima was 15 kilotons. The Minuteman 3 is around 300–350 kilotons. So you are talking about a capability that is not there right now.

The New START limits both the United States and Russia to 1,550 deployed strategic nuclear weapons. It has been stated policy that since the early 2000s, that Putin could use a nuclear weapon

in a conventional fight to, using his words, escalate to deescalate the conflict by using a tactical nuclear weapon to halt hostilities. Now, I know that some worry that this might lead to increased nuclear proliferation.

But I would kind of like to hear from you what your thoughts are. This is a part of the posture review right now. Do you think we ought to have a low-yield capability?

General HYTEN. So I strongly agree with the need for a low-yield nuclear weapon. That capability is a deterrence weapon to respond to the threat that Russia, in particular, is portraying. President Putin announced as far back as April of 2000 that the Russian doctrine will be to use a low-yield nuclear weapon on the battlefield in case of a conventional overmatch with an adversary.

Senator INHOFE. Let us say if we do not have one, the only thing we could do, if we were to use a response, would be a larger one in terms of kilotons.

General HYTEN. So two limits in that are what Henry Kissinger recently said: that if you do not have the right response, you could put the United States in a position where the two choices for the President would be surrender or suicide, suicide if you escalate too high and the escalation comes back at you, surrender if you do not have the ability to respond.

We do have low-yield nuclear weapons in our arsenal. They are with our aviation capabilities right now, but those aviation capabilities may not be the right response in terms of timeliness and survivability to get to where the threat is. Therefore, to respond to the threat, we need a small number of low-yield nuclear weapons that we can deploy on our submarine-launched ballistic missiles, still in the New START limits.

Senator INHOFE. I remember the conversation we had, when Kissinger was here, on that.

We talk a lot about the hypersonic threats that are out there. Let us start off by—give me a definition of a hypersonic threat.

General HYTEN. A hypersonic threat is a system that starts out ballistic, and so you will see it like a ballistic missile, but then it depresses the trajectory and then flies more like a cruise missile or an airplane. So it goes up into the low reaches of space and then turns immediately back down and then levels out and flies at a very high level of speed. That is hypersonic. That is a hypersonic weapon.

Senator INHOFE. Do both or either Russia or China have the hypersonic threat capability?

General HYTEN. Both Russia and China are developing hypersonic capabilities. We have watched them test those capabilities. So both Russia and China are aggressively pursuing hypersonic capabilities.

Senator INHOFE. If that happens, what kind of defense do we have against a hypersonic threat?

General HYTEN. Our defense is our deterrent capability. We do not have any defense that could deny the employment of such a weapon against us. So our response would be our deterrent force, which would be the triad and the nuclear capabilities that we have to respond to such a threat.

Senator INHOFE. Back to the triad, the capability that we would have with ours—when I talk to people back home who are not really into these issues, but they have heard of the B–52 and how old it is today and to use that for the length of time that we anticipate we would have to use that before we are able to replace that. What do you think in terms of the age of the three elements of our triad and their capability relative to those of China and Russia?

General HYTEN. So as you look across our force, you can start with the B–52. It is such an amazing airplane. The designers of the airplane were geniuses way before their time. But it is basically a truck to carry weapons. It is not a penetrating bomber. It will never be a penetrating bomber. A penetrating bomber would be the B–21. We only have a small number of B–2s. We need a larger number of penetrating bombers. That will be the B–21. We will need a new weapon to go on the B–52. We will need the long-range standoff weapon.

I am concerned about our ICBM force about the 2030 time frame and beyond. We replaced the propulsion, the guidance, the electronics on that system 15 years ago or so, and by 2030, all of those capabilities will have aged out. We did a detailed analysis that said the smartest thing we can do is just buy new this time instead of trying to replace all the components. We will have to do that.

The *Ohio*-class submarine. At a certain point, it will not go down under the water anymore. We need a new submarine to replace that, and we need new command and control and we need new weapons as well.

All those things come to fruition in the 2030s.

Senator INHOFE. Yes. Thank you, General Hyten.

Senator Reed?

Senator REED. Well, thank you, Mr. Chairman.

Again, General, I think this is a very serious debate about the new proposed systems, particularly the low-yield submarine-launched ballistic missile.

As you indicated in your testimony, we have systems that are even lower yield than the one we are proposing today. They are generally airborne, I believe, launched by an aircraft.

One of the things—and we talked about this—is there will be—my sense—a reaction and reaction. This will be a dynamic process. If there is a conventional attack, I do not think we will sit back and wait 'til they threaten to use a nuclear device. We will start positioning our resources immediately. Some of those resources will be low-yield nuclear weapons as a deterrent to their use of weapons.

In that context, why can we not use something like the long-range standoff weapon as a deterrent to the use of small nuke by the Russians?

General HYTEN. The answer is basically the reason we have a triad. We have a triad to respond to the different elements of the threat that Russia brings to bear. Russia is going to have, in the unclassified world, at least 11 different delivery platforms for a low-yield nuclear weapon that they can use in different places and different times. Right now, we have one and that is an airplane. The airplane can be positioned in the right place in order to respond to that kind of threat, but an airplane is also difficult. It has

to fight through a denied environment. It has to work in different areas.

As we worked through the various gaming of the responses that the Russians may have to those capabilities, we felt strongly that we needed another delivery option. So a small number of low-yield nuclear weapons on the submarine-launched ballistic missile, still under the 1,550 deployed strategic nuclear weapons under the New START. In other words, we will take a big weapon out of a submarine and put a small weapon back in, still the same kind of structure. We believe that will give future adversaries significant pause before they act.

Senator REED. Again, I think the whole issue—and you put your finger on it—is deterrence. The flip side of that is that even if we have these new systems, if they make, I think, the extraordinary error of using a nuclear device, we respond. There is at least the option on the other side—as you point out, they have multiple launching devices and multiple nuclear warheads—is to maybe try a second one, in which case we try a second one. Again, we get into this nuclear escalation scenario, which I think we are concerned about.

This is an issue I would like to say—I think it is a point we have to really think very, very clearly about and share with you your thoughts and the gaming that you have done and analysis you have done to see—again, for the public to vet this. So I look forward to doing that with you.

One of the other proposals is the sea-based nuclear cruise missile. As you know, in 2010, the prior NPR canceled the submarine-based cruise missile because the Navy literally had it in storage, and NNSA [National Nuclear Security Administrator] was not modernizing its warheads. So it seemed to be sort of obsolete in effect.

We have got some criticism from our colleagues, our allies, the South Koreans and the Japanese, because they see this as a very effective extended deterrent.

Can you just state the military requirement now for bringing back this system?

General HYTEN. Yes, sir.

The threat is from both Russia and China that drives the need for the sea-launched cruise missile. We have not made a decision yet about how to base that, whether it is on a surface ship or a submarine. We will look at that. Part of the 2019 budget request is to start down that process and decide what the best basing for that would be.

I can tell you the details in a classified session of why we believe the threat demands it, but I can tell you the threat is clear and I believe we need that to respond to the threat that is there.

Senator REED. Thank you, sir.

Just a final question is that we mutually rely upon NNSA to create the nuclear pits and all the other basic components of our nuclear missile response. Your predecessor, General Keller, indicated that he had some doubts about the ability of NNSA to do this given the ongoing debate about whether production would be in Los Alamos or elsewhere or what kind of production, the big box or the small box. Do you share those concerns?

General HYTEN. Well, I still have concerns. Those concerns have not gone away.

However, you should know that the Administrator of NNSA, Lisa Gordon-Hagerty—the first day that she took the oath, the first call she made was to me to commit that NNSA and the Department of Energy was fully on to deliver the capabilities that we need. As the STRATCOM Commander, my requirement for a future capability is that we need to build to 80 plutonium pits by 2030 in order to build out the nuclear weapons profile. I think that has been well studied, understood. We can talk about that further later if you desire.

But I still am concerned because the infrastructure is challenged, but the current leadership in DOE [Department of Energy] has made a commitment to me that they will go after that. I guess the concern that I have left over is we do not have a lot of margin there, and anytime we do not have a margin, I am concerned.

Senator REED. Thank you, sir.

Thank you, Mr. Chairman.

Senator INHOFE. I ask the committee to consider a list of 2,901 pending military nominations. All of these nominations have been before the committee the required length of time.

Is there a motion to favorably report this list of 2,901 pending military nominations to the Senate?

Senator REED. So moved.

Senator INHOFE. Is there a second?

Senator FISCHER. Second.

Senator INHOFE. All in favor, say aye.

[Chorus of ayes.]

Senator INHOFE. All opposed, no.

[No response.]

Senator INHOFE. The motion carries.

[The list of nominations considered and approved by the committee follows:]

MILITARY NOMINATIONS PENDING WITH THE SENATE ARMED SERVICES COMMITTEE WHICH ARE PROPOSED FOR THE COMMITTEE'S CONSIDERATION ON MARCH 20, 2018.

1. **BG Timothy J. Hilty, ARNG to be major general** (Reference No. 1118)
2. In the Marine Corps Reserve there are 7 appointment to the grade of colonel (list begins with Eric G. Burns) (Reference No. 1432)
3. **VADM Matthew J. Kohler, USN to be vice admiral and Deputy Chief of Naval Operations for Information Warfare, N2/N6, Office of the Chief of Naval Operations/Director of Naval Intelligence** (Reference No. 1455)
4. In the Marine Corps there are 2 appointments to the grade of lieutenant colonel (list begins with Thesolina D. Hubert) (Reference No. 1491)
5. **In the Air Force there are 24 appointments to the grade of major general (list begins with Vincent K. Becklund)** (Reference No. 1551)
6. **In the Marine Corps there are 6 appointments to the grade of major general (list begins with James W. Bierman)** (Reference No. 1556)
7. In the Army there are 533 appointments to the grade of major (list begins with Rachel L. Adair) (Reference No. 1563)
8. In the Army there are 35 appointments to the grade of major (list begins with Rose Abido) (Reference No. 1564)
9. In the Army there are 2 appointments to the grade of colonel (list begins with John P. Kilbride) (Reference No. 1575)

10. In the Army there are 530 appointments to the grade of major (list begins with Gregory J. Abide) (Reference No. 1581)
11. In the Army there are 993 appointments to the grade of major (list begins with Steven Abadia) (Reference No. 1582)
12. In the Marine Corps there are 337 appointments to the grade of lieutenant colonel (list begins with Benjamin S. Adams) (Reference No. 1592)
13. In the Marine Corps there is 1 appointment to the grade of major (Aaron J. King) (Reference No. 1611)
14. In the Army there is 1 appointment to the grade of major (Steven M. Hemmann) (Reference No. 1629)
15. **LTG Timothy M. Ray, USAF to be general and Commander, Air Force Global Strike Command** (Reference No. 1665)
16. **MG David D. Thompson, USAF to be lieutenant general and Vice Commander, Air Force Space Command** (Reference No. 1666)
17. **VADM Christopher W. Grady, USN to be admiral and Commander, US Fleet Forces Command** (Reference No. 1667)
18. **RADM Timothy J. White, USN to be vice admiral and Commander, Fleet Cyber Command/Commander, TENTH Fleet** (Reference No. 1670)
19. **Capt. David A. Welch, USN to be rear admiral (lower half)** (Reference No. 1671)
20. In the Air Force there is 1 appointment to the grade of colonel (Arthur W. Primas, Jr.) (Reference No. 1684)
21. In the Air Force Reserve there is 1 appointment to the grade of colonel (Gregory J. Payne) (Reference No. 1685)
22. In the Air Force there is 1 appointment to the grade of lieutenant colonel (Michael J. Patterson) (Reference No. 1686)
23. In the Air Force there is 1 appointment to the grade of lieutenant colonel (Brad R. Matherne) (Reference No. 1687)
24. In the Air Force there is 1 appointment to the grade of major (Jonathan A. Morris) (Reference No. 1688)
25. In the Army there are 35 appointments to the grade of major (list begins with Hayley R. Ashbaugh) (Reference No. 1691)
26. In the Army there are 62 appointments to the grade of major (list begins with Jeffrey A. Anderson) (Reference No. 1692)
27. In the Army there are 169 appointments to the grade of major (list begins with Ahmad B. Alexander) (Reference No. 1693)
28. In the Army there are 137 appointments to the grade of major (list begins with Ashley K. Aiton) (Reference No. 1694)
29. In the Army Reserve there is 1 appointment to the grade of colonel (Wilson R. Ramos) (Reference No. 1695)
30. In the Army there is 1 appointment to the grade of lieutenant colonel (Curtis D. Bowe) (Reference No. 1696)
31. In the Army there is 1 appointment to the grade of lieutenant colonel (Carl E. Foster III) (Reference No. 1697)
32. In the Army there is 1 appointment to the grade of lieutenant colonel (Michael A. Fowles) (Reference No. 1698)
33. In the Army there is 1 appointment to the grade of lieutenant colonel (Andrew K. Sinden) (Reference No. 1699)
34. In the Army there are 2 appointments to the grade of major (list begins with D013264) (Reference No. 1700)
35. In the Army there is 1 appointment to the grade of major (Christopher F. Ruder) (Reference No. 1701)
36. **RADM Scott A. Stearney, USN to be vice admiral and Commander, US Naval Forces, Central Command/Commander, FIFTH Fleet and Commander, Combined Maritime Forces** (Reference No. 1720)
37. In the Army Reserve there are 2 appointments to the grade of colonel (list begins with John J. Morris) (Reference No. 1736)

38. In the Army there are 2 appointments to the grade of major (list begins with Christopher M. Bell) (Reference No. 1737)
39. In the Army there is 1 appointment to the grade of colonel (Mikal L. Stoner) (Reference No. 1738)
40. In the Navy there is 1 appointment to the grade of commander (Jeffrey G. Bentson) (Reference No. 1740)

TOTAL: 2,901

Senator Fischer?

Senator FISCHER. Thank you, Mr. Chairman.

Thank you, General, for your service to this country, and I thank you for representing the men and women under your leadership.

The NPR states, "If Russia returns to compliance with its arms control obligation, reduces its non-strategic nuclear arsenal, and corrects its other destabilizing behaviors, the United States may reconsider the pursuit of an SLCM [submarine-launched cruise missile]."

However, in the debate, this statement has lost some of its nuance, and some now describe the SLCM as purely a chip to bargain for Russia's return to compliance with the INF Treaty.

Can you clarify this? If Russia returned to compliance with the INF Treaty and otherwise maintained its current course with respect to non-strategic nuclear weapons, would it be your best military advice to cancel the deployment of the SLCM?

General HYTEN. Senator, I agree with my boss, Secretary Mattis. I do not like the term "bargaining chip."

The capabilities that we proposed in the Nuclear Posture Review are in response to the threat. Everything that we talked about, including the low-yield nuclear weapon and the sea-launched cruise missile, are in response to a threat.

If that threat changes, then my military advice will change. But if that threat does not change, my military advice will stay that we need those capabilities in order to respond to the threat. I am not a diplomat. I am not a politician. Diplomats need to work those issues with our adversaries. I hope that they do, but my job as a military officer is to look at the threat, understand the threat, and propose capabilities to this body to deliver to the military so we can respond to any threat that exists. It is all about the threat.

Senator FISCHER. While we are on the topic of Russia's violations of the INF Treaty, your opening statement reads, "Russia's violation of the treaty with the development of the SSC–8 ground-launched cruise missile remains a significant issue as delivery of the treaty-violating system continues."

When you say delivery of the treaty-violating system continues, do you mean that Russia is continuing to produce and deploy the illegal system in greater numbers?

General HYTEN. Yes, ma'am.

Senator FISCHER. Since the NPR's release, some, the Russian Government in particular, deny that Russia genuinely has an escalate to deescalate strategy. I think you were questioned by a member of the Russian embassy staff on this point during a speech that you gave last month.

Do you agree with the NPR's assessment that the escalate to deescalate strategy reflects that Russian doctrine?

General HYTEN. I guess I will say that I watch very closely what President Putin says, and I watch very closely what the Russian military does in response. President Putin in April of 2000—April of 2000—almost 18 years ago, President Putin said that the doctrine of Russia will be to use nuclear weapons on the battlefield in a conventional scenario. That has been the continuing doctrine of Russia for almost 18 years. This is nothing new.

We need the ability to effectively respond to that. We need the ability to deter that. We do not want that to ever happen. There is no such thing as a tactical nuclear weapon in my opinion. There is no such thing as a conventional nuclear weapon. All nuclear weapons are strategic, but you need different kinds to respond to different threats.

Senator FISCHER. Would you agree that when we are looking at this continuous threat of a Russian doctrine to escalate to deescalate that is based on the talk of their senior leaders? It is based on the fact that they are building weapons that are designed for this purpose and that they do conduct training exercises.

General HYTEN. There is no doubt that they do all of those things. When I have my intel—I do not speak Russian, but when I have my intels translate the Russian for me, it is not escalate to deescalate. It is escalate to win. It is escalate to win on the battlefield. We have to deter that kind of response. That cannot be allowed.

Senator FISCHER. General, critics have made a variety of arguments against the deployment of that low-yield ballistic missile warhead on a submarine. In sum, they believe the system is impractical because any use of the weapon would enable the submarine to be detected, destroyed, and they believe would initiate a full-scale nuclear war.

Can you speak to those arguments, sir?

General HYTEN. Those arguments are not true, ma'am. I can tell you in a classified forum how a submarine would survive after launching. I can tell you how the Russians would see it. I can tell you how they would respond to that. I can also tell you that from a U.S. perspective, when we see a launch of a missile, we can characterize that threat. We understand where it is, where it is going. Unless it is a massive attack from Russia, any other scenario, there is actually a lot of time to respond, a lot of time to characterize, and it will be the same way on the Russian side. So each of those arguments is false. It is better to discuss the answers in a classified session.

Senator FISCHER. Thank you, sir, for addressing these immense threats that we face.

General HYTEN. Thank you, ma'am.

Senator INHOFE. Thank you, Senator Fischer.

Senator Nelson?

Senator NELSON. Good morning, General.

I am not too keen on ripping space out of the Air Force and creating a space corps. Do you want to state your position for the record?

General HYTEN. So I think I have stated my position many times. I think that some day we will have a space corps or a space force in this country. But I do not think the time is right for that

right now. But I loved the fact that the President talked about space as a warfighting domain. I loved the fact that he embraces the fact that we need to have a future that looks at this warfighting domain.

I am a big supporter of the bill that was passed by Congress last year in the National Defense Authorization Act that talks about looking at a space force and looking at when that would be the right time and what elements would be in place. I think the best example is the budget. The budget that was submitted this year is an 18 percent increase in space. Looking at warfighting, we are going to get after those pieces. Both the President and the Vice President and Members of this Congress, everybody is aligned with the threat. That is exactly where it should be, Senator. Thank you.

Senator NELSON. So you gave a speech back in December that the days of viewing space as a benign environment are clearly behind us, and we need to maintain our lethal edge in space. You have said continually since then that in order to maintain the edge, we have to move faster. Do you think this is happening?

General HYTEN. I see good signs. The good signs I see is the leadership in the Department right now: Secretary Mattis, Secretary Shanahan, Lord, Mike Griffin in R&E [Research and Engineering]. I see leadership in the Air Force and AQ [Aquisitions] that all believe in going fast. I think the budget lays the groundwork for going fast, but Senator, we have not done it yet. We have not done any of that yet. We have not proven to anybody that we can go fast again. We used to be able to do that. We need to be able to do it again. We can do it again. But we have to get out of our own way. But I am excited about the leadership in the Department that has been put in place to help lead that change.

Senator NELSON. General, I dare to touch the politically sensitive topic of the JCPOA [Joint Coalition Plan of Action]. If the President were to unilaterally withdraw, what kind of impact is that going to have on our global security environment?

General HYTEN. So my job, Senator, is to look at that treaty, look at what it does to our overall strategic deterrent, work with the intelligence community, as well as the broader interagency to evaluate whether Iran is in compliance with JCPOA. As I sit here today, Iran is in compliance with JCPOA.

But JCPOA is about nuclear, and from a command that is nuclear, that is an important piece to me because it allows me to understand the nuclear environment better. But it does not say anything about Iran as a global sponsor of terrorism or if Iran is building huge numbers of ballistic missiles that threaten their neighbors and potentially us some day. All of those will be the decision that a policymaker has to make, but my job is to look at the nuclear capabilities and make that recommendation, which I have done.

Senator NELSON. If we were to pull out of the JCPOA, does that send a message to North Korea?

General HYTEN. Any action the United States makes sends a message to everybody on the planet. So it will send a message to North Korea. It will send a message to Russia, China, our allies, Iran, Saudi Arabia. Everybody is impacted. That is one of the differences in deterrence in the 21st Century is that it is no longer a single country problem and a single issue problem. It impacts ev-

erybody. So every decision has to be considered in concert with the entire global environment.

Senator NELSON. General, you already discussed in detail the threat of the hypersonics. Your answer was that we need this submarine-based low-yield nuclear capability. Is that the deterrent to hypersonics not only from Russia but also China?

General HYTEN. So that is where we stand today. But I believe we need to pursue improved sensor capabilities to be able to track, characterize, and attribute the threats wherever they come from. Right now, we have a challenge with that with our current space architecture and the limited number of radars that we have around the world.

In order to see those threats, I believe we need a new space sensor architecture. The Missile Defense Agency and the Air Force are looking into that right now. There are $42 million in the fiscal year 2019 budget in the Air Force line to look at that, alongside of MDA [Missile Defense Agency] as a prototype. I am going to advocate, as I have advocated for the last 30 years that we need to move into space and be able to build sensors to conduct both the characterization of these new threats that are appearing, as well as discriminate better and earlier the mid-course element of the threat that exists today.

Senator NELSON. Mr. Chairman, in conclusion, I will just say I am sure that General Hyten lays awake at night after he has prepared all of this infrastructure up in space to protect us, and then he sees the threat of cyber attacks on that infrastructure, that that must keep you awake at night, General.

General HYTEN. All the threats keep me awake at night, sir. I wish they did not.

Senator NELSON. Thank you.

Senator INHOFE. Thank you, Senator Nelson.

Senator Cotton?

Senator COTTON. Thank you, Mr. Chairman.

Thank you, General, for testifying once again in front of our committee.

I want to return to something you said a few moments ago. You mentioned that Vladimir Putin first started talking about the use of nuclear weapons on the battlefield 18 years ago. Is that right?

General HYTEN. Yes, sir. I think it is worth going through that entire history because it goes across multiple administrations. It really talks about where Russia has been for the last 18 years. In April of 2000, he announced that the new doctrine of use of low-yield nuclear weapons on the battlefield was part of the Russian doctrine. He also announced a 50 percent increase that year in the budget for nuclear capabilities. 6 years later, he announced that Russia was going to modernize their entire nuclear arsenal and build new weapons and they were going to be 70 percent done by 2020. Dmitry Rogozin in 2015 came out and said we are not going to 70 percent done. We are going to get 100 percent done by 2020. This has been a continuing pattern of behavior that creates a threat to the United States that we have to respond to. That is the work that we have been doing, and that is what the Nuclear Posture Review does. I think it is a very measured response to the

threat that has been presented to us, much more measured than the speech Vladimir Putin gave on the 1st of March.

Senator COTTON. So it is often perceived that Vladimir Putin and his senior general staff's rhetoric on this is a response to U.S. actions, especially post-2014 in their Crimea invasion. But what you are saying is he first started raising this in less than a year after he had taken over leadership in Russia.

General HYTEN. Almost immediately upon his first election in 2000, he made this.

Senator COTTON. I think that is very telling. Now, sometimes talk is cheap with politicians, but when that talk is backed up by a substantial commitment of national resources, you can usually accredit it. Would you say that Russia has engaged in a substantial commitment of their national resources to modernize their nuclear force over these last 18 years?

General HYTEN. An enormous of their national treasure.

Senator COTTON. That threat is primarily driving the 2018 Nuclear Posture Review for our country.

General HYTEN. The Nuclear Posture Review is very consistent with previous, but it addresses the threat specifically.

Senator COTTON. Let me ask you this broad question before you get into any details. So we have been doing nuclear posture reviews for a while. We have been a nuclear power for 73 years. Is there a single operating concept or capability in the 2018 Nuclear Posture Review that is truly innovative or not reflective of 73 years of tradition in this country?

General HYTEN. It is all consistent with what we have been looking at from nuclear capabilities really since the beginning of the nuclear age in August of 1945.

Senator COTTON. So let us now be specific on a few points.

First, it has been this country's position for 73 years that we would not foreswear the first use of nuclear weapons. Is that correct?

General HYTEN. That is correct.

Senator COTTON. It remains so today.

General HYTEN. It remains so today.

Senator COTTON. Second, we have talked some about the low-yield submarine-launched warhead. While that specific capability may not have existed to this point on a submarine, as you have testified before, we have had lots of other low-yield weapons and we continue to have low-yield air-launched or bomb warheads. Correct?

General HYTEN. We used to have low-yield submarine-launched weapons too. As I think Senator Inhofe talked about, we did not maintain those going into the previous Nuclear Posture Review.

Senator COTTON. Is that low-yield submarine-launched, or is that sea-launched cruise missiles?

General HYTEN. It was low-yield submarine-launched at that time.

Senator COTTON. But we have also had sea-launched cruise missiles before.

General HYTEN. We have had sea-launched cruise missiles before. None of those capabilities are new. They are reintroducing

previous capabilities that we felt were needed to deter our adversaries and we believe we need to deter those adversaries again.

Senator COTTON. Again, driven primarily by the threat that Russia has posed by both the rhetoric and the reality of their nuclear modernization, as you have testified today, not just in the last year, not just in the last 9 years, but going back 18 years across three prior administrations, the Clinton Administration, the Bush Administration, and the Obama Administration.

General HYTEN. That is true, but it is also important to add China and North Korea into that equation because they drive the threat as well.

Senator COTTON. I think that is an important point. Almost all strategic discussions, certainly strategic arms control negotiations revolve around the bilateral threat between the United States and Russia. China is rapidly modernizing its nuclear forces. Much of that happens in a very clandestine fashion. So it is hard to say just how dire that threat has become. Certainly when you add Russia and China together, we do face the potential threat of nuclear overmatch in the future.

I have to say we do not have a good history of estimating nuclear weapons programs. We usually, in the last 73 years, have gotten it wrong when you look at countries like the Soviet Union, like China, like India, like Pakistan, and erred on the side of caution saying that it would take them longer to develop those threats.

So I think it is very important what you are doing at Strategic Command, what the entire administration has done with this new Nuclear Posture Review to counteract those threats that we face and to keep this country safe from ever having to face a nuclear war. The best way to do that is to have nuclear overmatch against all of our adversaries.

Thank you.

General HYTEN. Thank you, sir.

Senator INHOFE. Thank you, Senator Cotton.

Senator Shaheen?

Senator SHAHEEN. Thank you, Mr. Chairman.

General Hyten, thank you for being here and for your constant vigilance.

I want to go back just quickly to a question that Senator Nelson posed about Iran's nuclear capabilities, recognizing that you are looking at it only from the nuclear perspective, and I share your concern about their other destabilizing activities. But in your assessment, are we not better off with an Iran that does not have nuclear weapons than we would be with an Iran that does have nuclear weapons?

General HYTEN. I would prefer nobody had nuclear weapons. That would make my job a whole lot easier.

Senator SHAHEEN. I certainly agree with that. But on the issue of Iran——

General HYTEN. Would I prefer Iran without nuclear weapons? Absolutely. I would prefer Korea without nuclear weapons.

Senator SHAHEEN. Thank you.

General HYTEN. I do not think nuclear weapons will ever go away. But I believe in nonproliferation, and the more nuclear weapons proliferate, the more difficult the world is.

Senator SHAHEEN. Thank you very much.

I want to go back to something you said at a hearing in 2017 when you were before this committee because I asked you about cyber efforts and specifically whether you think we have a strategy that incorporates both a defensive and offensive strategy with respect to cyber attacks. I wonder if you can discuss whether we have made any progress since that hearing in 2017 on these issues.

General HYTEN. So, ma'am, we have made progress.

Senator SHAHEEN. Can you talk a little bit about what that is?

General HYTEN. We have made progress in moving forward and taking the fight to the adversary that is in the Middle East right now. But in my opinion, we have not gone nearly far enough. I think we have to go much further in treating cyberspace as an operational domain. Similar to the discussion we were having earlier about space as a warfighting domain, cyberspace needs to be looked at as a warfighting domain. If somebody threatens us in cyberspace, we need to have the authorities to respond.

I always find it odd that we will give young soldiers, sailors, airmen, and marines lethal authority to operate far from home in harm's way to apply lethal force against an adversary using a set of rules of engagement, but we will hesitate to give a four-star admiral the authority to conduct cyberspace operations because we are concerned he will not follow the rules of engagement. We need to have specific rules of engagement in cyber that match the other domains that we operate in, but then we need to delegate that authority all the way down so we can deal with threats that exist that challenge the United States.

Senator SHAHEEN. Well, I agree with that. So what do we need to do in Congress to make that happen? Do we need to give you expressed legislative authority? Do we need to delineate who has got those authorities?

General HYTEN. I always hesitate to advise Congress on what you should do. That is your responsibility.

But I will tell you when I look at, what would be helpful to me is statements like we have had the last 2 years in space where space is a warfighting domain, and we need to develop responses to the warfighting domain. What that has done is it allowed us to push the envelope inside the Department. We are not there yet. We are going to be coming back in space with a number of different things about declassification of certain capabilities, additional authorities, those kind of things. But stating it is a warfighting domain similar to land, sea, and air was a huge step forward for us to move forward. I think we need similar things in cyberspace.

Senator SHAHEEN. Well, does, to some degree, the Nuclear Posture Review not do that because it suggests that a response to a massive cyber attack might be the use of nuclear force? I mean, I do not agree with that, but it does sort of lay that out, that that is a potential response.

General HYTEN. I think it is clear that you could have catastrophic attacks on the United States through space or cyber and that we need to have the ability to respond to that and a means of our choosing in a domain of our choosing. People always ask me in space and cyber, how do you deter in cyber? How do you deter in space? How do you fight and win a war in space or cyber? You

do not. War, conflict, deterrence is against an adversary, not against a place. You have to take the place out of it and focus on the adversary. What is the adversary doing? How do I deter that adversary? That is the piece that we have to go down, focusing back on an adversary.

That is what you see in the Nuclear Posture Review, focusing on adversary threats. How do we respond to that? Then hopefully that allows room for our diplomats to sit down with our adversaries and say is this the world you really want to live in.

Senator SHAHEEN. Well, thank you. I am out of time. Can I just ask one more question, Mr. Chairman?

You talked about the progress, so to speak, that Russia has made in nuclear weapons and their military might. This is a country with an economy that I think is about the size of Italy that has been under sanctions for a number of years since they invaded Ukraine. They have done all of this military buildup despite those things. So what are they doing right to allow them to do this, and what lessons can we take from that?

General HYTEN. Well, "right" is in the eye of the beholder.

Senator SHAHEEN. Right. You are right. I do not really mean to say "right." But what have they done to be successful in this arena?

General HYTEN. So they have decided that that is the most important investment they have to make as a nation, and they have put the vast majority of the resources they have left into that. Oh, by the way, North Korea has done the same thing. That is a prioritization in Russia and North Korea.

Senator SHAHEEN. Thank you.

Senator INHOFE. Thank you, Senator Shaheen.

Senator Rounds?

Senator ROUNDS. Thank you, Mr. Chairman.

General, first of all, thank you for your service to our country and thanks for the opportunity to visit with you today on some of these key issues.

I would like to follow up a little bit with where Senator Shaheen was going. I want to talk about our policy versus the policies of our near-peer competitors.

Let us just start out with the treaties that we have in place right now. With regard to INF, are we in compliance with the INF today?

General HYTEN. We are in compliance with the INF today.

Senator ROUNDS. Would you say that Russia is in compliance with the INF today?

General HYTEN. They are not.

Senator ROUNDS. Would you say that we have not only Russia to be concerned with with regard to similar weapons but also a near-peer competitor in China as well?

General HYTEN. I agree that all weapons have be looked at on the global perspective.

Senator ROUNDS. Do you see any limitations on China with regard to the INF?

General HYTEN. They do not have any limitations in the INF, and they have built significant numbers of intermediate-range ballistic missiles that if they were in the INF, they would be contrary to that treaty.

Senator ROUNDS. So with regard to our near-peer competitors, we have a deal with Russia. We do not have a deal with China. We are bound by the deal with Russia. We are honoring it; they are not. China, on the other hand, has no obligations to comply with it, and so they are free to move forward with their weapons development and deployment in place.

Is it fair to say that that puts us at a competitive disadvantage, similar to having one hand tied behind our back?

General HYTEN. I think Admiral Harris testified to a similar thing the other day. It makes his job much more difficult.

But there is no one-size-fits-all when it comes to deterrence. There is no one-size-fits-all. You have to look at all the adversaries separately and then you look at the impacts of any decision with those adversaries. I believe that we are better off if Russia would come into compliance with the INF and we would be in compliance with the INF in the overall scheme of the world. However, we have to make a decision in the near term. If they do not come into compliance with the INF, how long will we continue to, as you said, tie our hands?

Senator ROUNDS. I think that is being recognized in your posture position at this time.

Let me go on from there because what we have talked about now—we discussed the triad, the air, land, and the sea. I think you made a very clear statement about both cyber and also about space.

With regard to cyber, do you believe that our near-peer competitors in cyber—that they have the same identification of what the norms are with regard to how we operate in cyberspace as we do?

General HYTEN. No, sir, they do not.

Senator ROUNDS. In other words, if I could shortcut it a little bit, they do not see any problem with attacking us in cyberspace today while we probably do not take as active a role in attacking their infrastructures they do in attacking our infrastructures today?

General HYTEN. I think that the restrictions on Russia and China in particular are much less than the restrictions we put on ourselves.

Senator ROUNDS. That is a policy decision on our part. Is it not?

General HYTEN. That is a policy decision on our part.

Senator ROUNDS. What about with regard to space? Clearly any one of our weapon systems right now is dependent upon our ability to see and to hear and to monitor what other people are doing. Do they have the same norms with regard to operations in space as we do?

General HYTEN. There are no such things as norms of behavior in space.

Senator ROUNDS. So are they more aggressive with regard to the deployment of militarily designed or systems that are designed with military purposes as we are?

General HYTEN. So I do not want to talk about that in an unclassified session. I would be glad in a classified forum to go into details of what they are doing, but all I can tell you is that they are being very aggressive in establishing what they perceive as norms that we see that I cannot talk about in here at the current time.

Senator ROUNDS. Would it be fair to say that the eyes and ears that we have in space are at risk today from our near-peer competitors?

General HYTEN. Today they are not at risk, but I am concerned in the near term they would be at risk. Today we have such an enormous capacity that the capabilities that our adversaries are building cannot challenge it just because of the sheer capacity that we have. But in the not too distant future, they are going to build the capabilities that will allow them to challenge that across the board, and we have to make sure we stay ahead of that threat.

Senator ROUNDS. Let me go to one other line of questioning for just a minute. The Air Force has recently announced their plans to retire the B–2 by the early 2030s, sustain the B–52 through 2050, and move forward with procurement of 100 B–21's. Were you involved—was STRATCOM involved in making the determination of the overall bomber requirements?

General HYTEN. I was involved in the discussions.

Senator ROUNDS. Do you believe that 75 B–52s and 100 B–21s will be sufficient to conduct a nuclear deterrence mission while supporting conventional bomber missions as well?

General HYTEN. I believe that is the minimum capability required.

Senator ROUNDS. Has the Department begun planning for basing the B–1s—I am sorry—the B–21s.

General HYTEN. The B–21s? I know that the basing process is underway. I think that is an Air Force issue. That is something that they will come to me, STRATCOM, when they come to the Congress as well. But that is an Air Force issue that they have to work. But I know that process is underway because, well, I am an Air Force officer. So I do stay in touch with my service.

Senator ROUNDS. I understand. Thank you, sir.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Rounds.

Senator Heinrich?

Senator HEINRICH. Thank you, Chairman.

Welcome, General Hyten.

I want to say that I appreciate that you have long expressed your frustration about our inability as both government and military to move more quickly in terms of acquisition, as well as in terms of decision-making. I certainly agree that we need to be more agile and responsive across the board. I think that applies to space systems. It applies to helicopters. It applies to our nuclear programs.

Does it concern you that the NNSA conducted an analysis of alternatives on pit production that chose to ignore the Nuclear Weapons Council's previously endorsed plan to meet our nation's nuclear stockpile requirements and that it also took 3 years for that analysis to move forward?

General HYTEN. It does not concern me they conducted an analysis of alternatives. I think that is a smart thing to do. But it does concern me it took 3 years. I do not think any AOA [analysis of alternatives] should take 3 years. We take 3 years in the Department of Defense a lot too. I do not know why that is, Senator. I do not know why we spend so much time. It used to be we could build something in 3 years, but now we like to study things for 3 years.

But like I said earlier, Lisa Gordon-Hagerty, the new Administrator of NNSA—she called me day one and said we are going to get you the answer. I do not have the answer yet on where we are going to go. As a member of the Nuclear Weapons Council and as the STRATCOM Commander, my job is to state the requirement. The requirement is 80 pits. And, oh, by the way, the first element of that is 30 pits at Los Alamos. That is regardless of whatever the AOA comes out. We have got to get to 30 pits at Los Al first.

Senator HEINRICH. Do you think it would have been appropriate and smart for them to at least have considered the pathway that was chosen a few years ago as a response to the fact that NNSA was not moving fast enough at the time?

General HYTEN. So I think they are doing that in part of their engineering analysis now. I have not seen the results of that yet. I will see that shortly. I think Lisa Gordon-Hagerty has committed to this body to come back in the near future.

Senator HEINRICH. I have had some productive conversations with her.

Can you talk a little bit about what any additional slip would mean in terms of our life extension programs?

General HYTEN. I am very concerned about any because basically all the new weapons that we just talked about, *Columbia,* sea-launched ballistic missiles, which is Trident, the GBSD [Ground-Based Strategic Deterrent], the new ICBM, the LRSO [Long-Range Stand-Off Missile]—all of those require weapons. Plutonium pits that are 100 years old are not a good thing for this country. We do not know how to characterize that. We do not know the material interaction of all those pieces. We have to make sure that we have a modern—if we are going to be a nuclear nation, we have to have plutonium pit production.

So I am concerned that we have now pushed that just like everything else so everything will deliver just in time. Anytime we have something that delivers just in time, I get very nervous.

Senator HEINRICH. Well, I share your concern.

The NDAA, Mr. Chair, that was just signed into law actually requires the Nuclear Weapons Council to certify no later than May 11th of this year that NNSA's recommendation actually meets requirements. So we have certainly got to get this thing back on track and get it on track quickly.

I want to shift gears for just a minute to some of the developments around what was formerly called Operationally Responsive Space. It is now the Space Rapid Capabilities Office. It certainly received significant priority in resources in this year's budget request.

Can you talk a little bit about the importance of responsive space in general and describe how the newly designated Space Rapid Capabilities Office will contribute to our nation's resilience in that domain?

General HYTEN. So the key, when you look at the budget, especially when you look at all the elements, including the classified side, is the beginning finally of building a resilient warfighting architecture for space. That is the path we are starting down to right now. The Space Rapid Capabilities Office will be a key piece of that because there will be certain elements that will be small, resilient

that we need to go fast with. They will be the perfect place to do that. We have to give them the authority and responsibility, the funding, and let them go do that. But like I talked about with Senator Nelson before, that is the good news.

The challenge we have now is we have not done it. We have not done anything. It is just sitting right there. I think, Senator, you have been involved in that discussion with me for at least the better part of a decade. We have never quite got there. Everything is lined up now. It is right there. Everybody understands the need. The administration, the Congress, and the Department understand the need. We have put a budget in place that starts down that starts down that path. Now we have to do it.

Senator HEINRICH. I could not agree more. I think for the first time we actually have that alignment. So let us take advantage of it.

General HYTEN. Yes, sir.

Senator HEINRICH. Thank you, sir.

General HYTEN. Thank you.

Senator INHOFE. Thank you, Senator Heinrich.

Senator Ernst?

Senator ERNST. Thank you, Mr. Chair.

General Hyten, very good to see you. Thank you for your leadership of Strategic Command, and for the men and women that serve with you in STRATCOM, we thank them for their service as well.

You have acknowledged over and over again today that space is becoming an increasingly contested and militarized domain. While we continue to hold that technological advantage in space, our adversaries are rapidly catching up to us. They are modernizing and developing their own space capabilities.

So I do appreciate your efforts to streamline the Air Force's space acquisition process, which has significantly hampered our ability to rapidly develop and deploy our critical capabilities. I do believe more needs to be done to ensure the U.S. can overmatch our near-peer competitors and adversaries in space.

So the only way to solve a problem is to understand exactly what we are up against. You have discussed what you can today in an open setting. But would you agree that the threats that we see in space are greater and more complex than they were in the year 2011?

General HYTEN. Significantly greater. I think tomorrow you will see in the closed hearing how all of that comes together because in the closed hearing, you will see the budget played out into the future against the threats that are now coming out. You will understand the integration of all those pieces together. So weather permitting, I sure hope we get together tomorrow so you can see that.

Senator ERNST. Absolutely. Given that the last national security space strategy was developed in 2011, do you believe it would be worthwhile for the DOD [Department of Defense] to develop a modernized strategy to face today's threats?

General HYTEN. So if that is a yes or no question, which it sounded like, I will say yes. But I will tell you that the Air Force, the Services, the National Reconnaissance Office, and my command have worked together to build what I think is an integrated strat-

egy. The challenge with it is it is so classified we can share it with only a very few people. We will be able to share it with you tomorrow.

I think the work we have to do is actually figure out what really needs to be classified in the future, how do we do that because we need to be able to plan with the other combatant commands, plan timing and tempo of our operations. All those pieces have to come together, and unless we have things that we can talk about in forums like this, it is a very difficult problem to do. So I think we have a very good strategy now. The problem is not that many people know it. So we are going to have to work that issue.

Senator ERNST. I do appreciate that. You can see the level of concern that is coming from those of us on the Armed Services Committee here in the Senate. We do hear it from our public as well. While they might not have access to the same level of information, they do have a concern about it. So we look forward to getting that information.

On to the Nuclear Posture Review. The 2018 NPR stresses the importance of nuclear command, control, and communications, so our NC3 modernization, promising upgrades, new technology, and better governance and planning across the commands. What are the greatest challenges to sustaining and modernizing the Department's NC3 capabilities?

General HYTEN. So the biggest challenge is the integration of all those new weapons platforms I was describing before. Our nuclear command and control today is secure and reliable, but it operates on the old weapon systems, the old platforms, the old structure. We talked about in 2030, the new submarine, the new bomber, the new ICBM, new capabilities are going to come on line and they are going to have to fit into a new nuclear command and control architecture. We have not directly defined that for the Congress or for our nation yet, and we are going to have to do that. If you think about 2030, it sounds like a long time away, but it is only 12 years. This year, we have to make some critical decisions on governments. The Chairman and the Secretary are involved in that right now. We have to get after defining what that issue is.

Senator ERNST. So you would characterize this as that we do not have sufficient and capable acquisition prepared.

General HYTEN. So I would say that the nuclear command and control today is fine. We can talk about that in a classified forum, but it is good. But we have to have an acquisition plan that delivers the nuclear command and control in 2030 that will match all the weapon systems. We have not matched that yet. The Air Force has done a good job in establishing the right structure. The Navy has done a good job establishing the right structure. But there is another element, which is the national piece, that is not as well defined yet, and how all those pieces are going to come together is probably the biggest question. So we understand the problem. We have clearly understood what the problem is. Now we have to explain to ourselves and then to you the approach to get there in the future.

Senator ERNST. I appreciate that. My time is expired but, General, I do want to thank you again for your leadership in this area and appreciate the fact that you are very forward thinking. We

really do need that at such a critical time. So thank you to you and for the men and women that serve with you. Thank you.

General HYTEN. Thank you, ma'am.

Senator INHOFE. Thank you, Senator Ernst.

Senator Warren?

Senator WARREN. Thank you, Mr. Chairman.

Thank you, General Hyten, for being here.

General, we just passed a significant deadline for the New START, which requires both the United States and Russia to limit the number of deployed nuclear warheads and platforms. According to the terms of the agreement, both Russia and the United States were required to certify by February 5th of this year that we have met those caps.

General, are you confident, based on the verification mechanisms we have in place, that the Russians have lived up to their end of the agreement so far?

General HYTEN. Again, a yes or no question. The answer is yes. There are some caveats. There are still disagreements on both the Russian and American side about certain elements of their bomber force, our bomber force. But we certified on the 5th. They certified. We believe, given the current mechanisms, that we are in compliance.

Senator WARREN. All right, good. Thank you, General.

Last year, you told Senator Kaine that you continue to support the New START limits, and I understand that New START applies only to strategic weapons not to the entire nuclear arsenal. I share your concerns about Russian verification in the INF Treaty that there are some areas where we have concerns. The Nuclear Posture Review calls for two new low-yield warheads to be developed in our own nuclear arsenal.

General, you said that you do not support increasing the number of strategic weapons. As part of developing these two new low-yield options, do you support increasing the overall size of the nuclear arsenal?

General HYTEN. No, ma'am. So here is what we will do. We will take each of the sea-launched ballistic missiles, the *Ohio*-class submarines that we have. We will pull a missile out. We will take the large warhead off. We will put a small warhead on, put it back on the submarine, and put it out to alert. So the total numbers of weapons that we have will be greater, which is kind of an interesting piece is that we will have the same number of weapons, lower total yield, and somehow that is creating a destabilizing structure which is an interesting dynamic.

Senator WARREN. Thank you, General. I appreciate the detail on this.

If I can, just one more question on this. New START expires in February of 2021, but the agreement includes an option for a 5-year extension. What conditions would you want to see in place for us to extend New START?

General HYTEN. So that is a question for the State Department. Again, I am not a diplomat. I am not in the White House.

My desire and what I present to the State Department and to my leadership in the White House is that if we can create conditions for stability across nuclear weapons across the board, that makes

my job easier. My job is to defend the Nation against nuclear threats, space threats, all the threats that we have. Knowing what our adversaries have and being able to verify that is hugely important. I would like to be able to do that across the entire spectrum of capabilities. But the most critical is the strategic limits that are in the New START.

Senator WARREN. Good. Well, I appreciate that, General. I have no illusions about Vladimir Putin. I think he is a thug and a bully. I think we will continue to disagree with him more than we agree, including on nuclear issues. But Russia and the United States still control strategic nuclear arsenals capable of blowing up the world many times over. So if it is possible to continue to make progress and, as you say, more stability in this one area, then I think we need to continue to have that conversation.

With my remaining time, I would like to ask one other question and pick up on Senator Ernst's point and ask you about plans to modernize the nuclear command, control, and communications system, the NC3. Last month, Senator Reed and I visited Hanscomb Air Force Base in Massachusetts to meet with the program executive office for NC3. We have got some really talented people up there doing critical work. But I am worried because everyone I have talked to agrees that the Air Force Materiel Command, which is responsible for acquisition side of NC3 recapitalization, is understaffed for this mission.

So can I just ask, General? Will you commit to working with me and with this committee and with General Pawlikowski to advocate that NC3 is appropriately staffed so that it can move forward as it needs to?

General HYTEN. I will commit to do that, Senator.

If I could, just one addition to that is that we actually have really good people assigned to that job right now. The problem really is that you can create the slots and put people in those slots, but this is such a complicated problem, that it takes years to build the expertise that you have. So just because you get a smart person and put him in the chair, it does not mean you have solved the problem. We actually have to get training for them and build that expertise up because we took our eye off that expertise, and now we have to rebuild it.

Senator WARREN. Well, I understand that. Your point about we took our eye off this is absolutely spot on. The systems that comprise NC3 are aging, and they are far too critical to be left to chance. We need to make sure that this system is secure and that it is resilient, and we need the best acquisitions approach to it to make sure that we can get this done on time. I hope we can continue to work together on that.

General HYTEN. Yes, ma'am.

Senator WARREN. Thank you, General.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Warren.

Senator Tillis?

Senator TILLIS. Thank you, Mr. Chairman.

General, thank you for being here and for your decades of service and dedication.

One question I would like to start with—it was maybe an NDAA or two ago that we had a discussion about retiring some of the outdated weapons in our arsenal. How are we doing with that, and is there anything more that we need to do for some of the outdated weapon systems, some that are just either outmoded or potentially dangerous?

General HYTEN. So the stockpile—you are talking about the nuclear weapons here. The nuclear stockpile is secure. But as you said, a few years ago, we started looking at some of the old weapons, and slowly and surely started removing those from the stockpile. In order to get to what we have actually done, we have to go to a classified forum.

But I think that is a smart thing to do because we need to make sure that the stockpile is there for two reasons: to support the fielded forces that we have but to also support a potential violation of the New START or a breakout of that treaty so that we have the ability to go forth. I mean the Minuteman missiles today, for example, only have one warhead on top of each of the missiles that we have deployed but we have the ability to put three on top. We need to have those extra weapons in case there is a problem with our adversaries in Russia or China that we need those capabilities. So we have to make sure we maintain the stockpile at the right level, but we should not maintain anything greater than that. So we have been making good progress on that.

Senator TILLIS. The 2-year spending bill. How is that affecting—what kind of time horizon do we really need for you? You have got some long-term execution horizons for your work. The 2-year spending bill helps, but can you tell me specifically in an open setting how that has been helpful to your command?

General HYTEN. We do not have the bill yet. That is the biggest concern I have. But assuming that we do, what we will do for the first time is we will have stability for 18 months, and stability is the most important thing. You know, all the things we——

Senator TILLIS. Eighteen months seems like a long time around here, but it is amazing that you consider that positive. But we all know that is not enough time for your line of business.

General HYTEN. The most important thing is a budget is a budget on the first of every year. That is the most important thing. Whether that budget comes through a 2-year budget or an 18-month, but having a budget on the first of the year. When I look back at the history and the folks that used to go fast, the Shrevers, the Rickovers, the biggest thing—they always started with a budget on the first of the year, and because of that, they had the ability to make decisions and flex accordingly. When you do not, not only do you not go fast but you actually waste huge amounts of money. Both of those things bug me.

Senator TILLIS. So is it not fair to say—I know you do not want to give Congress advice, but if we come up short on these spending decisions, then some of the dates that you have talked about and some of the capabilities that will come on line will also shift to the right?

General HYTEN. Since I have almost no margin in some of those programs, that scares the ever-living heck out of me.

Senator TILLIS. On the INF with Russia, the ideal world would be that Russia is actually complying. But if they do not, at what point—is there a sufficient level of compliance where, even though they are cheating in certain areas, it is worth having, or at what point do we have to say we have got to take the handcuffs off?

General HYTEN. Well, you have seen in the budget for fiscal year 2019, we have proposed starting research and development on the ground-launched cruise missile. Research and development is not in violation of the treaty, but testing and deployment of that capability would be. But nonetheless, we have said it does not look like they are going to come back in compliance, and we are going to start down that path.

President Putin yesterday said he did not want an arms race. Of course, on the 1st of March, he showed nuking Florida. So I am not sure exactly what the message is there, but I can tell you that if we have to build intermediate-range missiles to respond to the threat, I have no doubt that this country knows how to do it. We have done it before. We can do it again. We proposed starting the research and development in 2019 to start down that path.

Senator TILLIS. Do you agree that if we do not take that threat seriously, that some have testified before the committee they put us in a position of—I think the phrase was used—we could be in a position of either surrender or suicide?

General HYTEN. That is the Kissinger quote, and I agree with that. I think we need a low-yield nuclear weapon, very small numbers. I can tell you how many we need in a classified session. It is not many. But I think we need that to deter our adversaries to make sure we do not get into that point where the only decision for the President is suicide or surrender.

Senator TILLIS. Well, thank you, General. I for one will be doing everything I can to make sure that we provide you funding so that you can do your job the way I know you can do it. Thank you.

General HYTEN. Thank you, Senator.

Senator INHOFE. Thank you, Senator Tillis.

Senator Peters?

Senator PETERS. Thank you, Mr. Chairman.

Thank you, General Hyten, for being here today and for your testimony. As always, thank you for your service as well.

We have heard from several members here today questions related to the low-yield submarine-launched ballistic missile, as well as the nuclear-capable sea-launched cruise missile. So my question relates to the discrimination issue that some people have raised, that with these particular capabilities, an adversary may not be able to identify that a low-yield SLBM [Submarine-Launched Ballistic Missile] is actually a low-yield weapon that has been fired and it could possibly trigger escalation thinking something more is coming at them.

In fiscal year 2007, the Navy considered a conventional Trident modification where Trident submarines would carry conventional warheads, as well as nuclear warheads. At the time, Congress rejected funding for that modification. Ted Stevens, a former Senator here, said, "A country that picks up or identifies a launch might legitimately worry whether the weapon carries a nuclear or conven-

tional payload." This could be a provocative action if taken, which was part of his comments in rejecting that idea.

So my question to you is, with a low-yield warhead, is the discrimination problem not still there? Is it more dangerous? What should we do about that?

General HYTEN. So there are a million ways to go down that. It is a very complicated answer. I will try to be brief.

The first thing is that from detection to creation of the explosion is less than 30 minutes. It is a very short period of time. If somebody does detect that launch, they will see a single missile or maybe two missiles coming. They will realize it is not an existential threat to their country and therefore they do not have to respond with an existential threat. That is what I would recommend if I saw that coming against the United States.

But I think the first thing you have to realize is that, first of all, it is a deterrence weapon. The first use of that weapon is to make sure that nobody use that kind of weapon against us.

The second piece is that if we do have to respond, we want to respond in kind and not further escalate the conflict out of control. And so an adversary, Russia in this case, will see a weapon coming perhaps—I can talk about that in a classified forum as well. They will see it coming, but they do not have to respond right now and they will not have time to respond because they will not want to commit suicide.

So all of those pieces, when you look at all the pieces coming together, actually if you are talking about a rational actor, will not be an issue in terms of it: so deterrence first and then a response weapon in kind to keep the conflict from escalating worse. It actually makes it harder for an adversary to use the weapon in the first place, and, if it does use it, it allows you to respond appropriately.

Senator PETERS. The key is a rational actor.

General HYTEN. The key is a rational actor. A rational actor is the basis of all deterrence policy.

Senator PETERS. Right.

There have also been a number of questions related to NC3 systems that you have answered. My question is about the priorities. Where does modernizing NC3 fit in with the modernization efforts of our broader nuclear enterprise? It seems to me that it is essential that we have secure and reliable command and control in place prior to new weapons, but how would you balance those priorities?

General HYTEN. So the way I have talked about it, it used to be the big four. The big four were bomber, ICBM, cruise missile, submarine. It is now the big six, bomber, ICBM, cruise missile, submarine, plus NC3, plus nuclear weapons. Those six elements have to come together for our nuclear infrastructure and for our nuclear deterrent to continue to be viable in the future. All six of those have to come together in the 2030 time frame for the future. They all come together today. We are fully ready today, but to make sure it comes together in the future, we have to be working all six.

Senator PETERS. Simultaneously.

General HYTEN. Simultaneously.

Senator PETERS. Earlier you testified that the sea-launched cruise missile is not a bargaining chip. But last month, Secretary Mattis testified at the House Armed Services Committee that the

submarine-launched cruise missile will, "give our negotiators something with which to negotiate." Could you clarify that for us, please?

General HYTEN. Absolutely. I think the Secretary said it exactly right. I do not like calling anything a bargaining chip. That capability is against the threat. However, that capability also gives our negotiators something to talk about. If you do not have something to talk about, it is very hard to sit down and negotiate. But it is not a bargaining chip because it is to counter the threat. I think the only thing he did not like and I do not like is using the term, "bargaining chip." But it does give our negotiators things to work with, which is a good thing.

Senator PETERS. Thank you, General.

Senator INHOFE. Thank you.

Senator Scott?

Senator SCOTT. Thank you, Mr. Chairman.

Good morning, General. Thank you for your service to the country as well.

General HYTEN. Thank you, sir.

Senator SCOTT. Russia's strategy to escalate to dominate is something this committee has heard about over the last 3 weeks several time. Senator Fischer mentioned it this morning. General Scaparrotti talked about it in my office when we met a few weeks ago as well. To me, it is chilling to think that Vladimir Putin sees the preemptive opportunity as a real one and a way to cement the gains that he is making as he tries to grab more territory and frankly intimidate as many of his neighbors. Eastern Ukraine comes to mind as does the possibility of Russia seeking to build a land bridge through Lithuania to its enclave Kaliningrad.

I am confident the administration will use all available resources, whether it is diplomatic, military, and economic means, to counter such a strategy if we find ourselves or our allies in need of assistance.

What we have learned, though, is that Russia truly respects strength. I am interested in what kind of strength we should have to put Russians' ambitions in check, and that being the recently completed Nuclear Posture Review proposes returning two capabilities you have already talked about with Senator Peters, both the sea-launched ballistic missile, as well as the cruise missile.

My question for you is do you have all that you need in order for us to develop a complete low-yield nuclear program for missiles?

General HYTEN. So, first of all, as the Commander of United States Strategic Command, I have everything I need today to deter Russia from doing anything against the United States of America. We are fully ready against any threat that exists today, without a doubt.

Senator SCOTT. Very good.

General HYTEN. What my concern is will that be the case for the commander after commander after commander after me as we go down looking in the future. In that case, we have a lot of work to do in order to make sure that those capabilities come on line. We believe that in order to deter Russia from using nuclear weapons on the battlefield, we should deploy a low-yield nuclear weapon on our ballistic missile submarines. We believe, to respond to a num-

ber of threats both in Russia and China, that we should have a sea-launched cruise missile capability in order to respond to that. We know how to do all of that stuff. It is not new. It is work that we have done before both in the Department of Defense and the Department of Energy. We know exactly how to do it. We just have to go do that work.

But the most important thing—and I think Senator Reed said it earlier. The most important thing is the continuing modernization of the triad because that is the foundation of our nation's defense, and that is the strength that will continue to deter Russia into the out-years.

Senator SCOTT. As we look at the potential of those who succeed you or come after you, is congressional authorization as it relates to low-yield nuclear weapons essential or not necessary?

General HYTEN. That is really a question for lawyers not for a combatant commander because it is so important to me I talk to lawyers. They have told me that congressional authorization is required. Therefore, the Nuclear Weapons Council and I have talked to the Office of Management and Budget. The Department of Energy is working with them. I think they will have an approach to come look for authorization to begin that right away so we can start down that path. It is already in our 2019 budget submission. It was not in the 2019 Department of Energy budget submission. That is the Department of Energy piece that will require authorization, and I think that will come in a fairly timely way.

Senator SCOTT. Senator Tillis mentioned it earlier and you commented on it very clearly that the continuing resolutions that have presented real hurdles for our military are measurable in real dollars. I met with the Secretary of the Navy, and he said that over the last several CRs [Continuing Resolutions], it has cost the Navy in quantifiable dollars about $9 billion. That to me seems astounding that as tight as things have been—and frankly, we are hopeful for the $165 billion that we are looking for to being deployed to help our men and women in uniform. The fact of the matter is that short-term budgeting has got to be an obstacle that is preventable, number one, and number two, a major source of angst for folks in your position.

General HYTEN. So I worry about it for a number of reasons. I cannot even describe the impact on morale to the workforce because when it happens, the message that is sent—I know it is not intentional because I talk to each and every Member of Congress, and they all respect the military. But the message that is sent is they do not care, is that the Congress does not care, the Nation does not care when they do not get a budget. When the civilians employees have to sign a piece of paper that says, yep, I will go home, I will do no work, it is so deflating to the workforce that it is hard to describe what the impact of that is.

Then the inefficiencies that we put into the overall conduct of the B–21 program, any new program that comes up that has a funding increase required that we cannot do, we incorporate all kinds of inefficiencies into that process.

Then I still do not have a problem today conducting my mission, but I really worry about the long-term impact for continuing to do that. I know that if we do not get routine budgets, that the sched-

ules now that deliver just in time will not deliver in time because we will not have an efficient program delivering them.

So I worry about that in a lot of ways. I know each of the members here do, but as a body, it is so essential that the Congress come together and pass a defense appropriations bill.

Senator SCOTT. Thank you. Certainty and predictability are absolutely essential for the success of our military.

Senator INHOFE. Thank you, Senator Scott.

Senator Donnelly?

Senator DONNELLY. Thank you, Mr. Chairman.

Thank you, General, for being here.

In your written testimony, General, you highlight the need to prioritize and accelerate development of hypersonic capabilities, and I could not agree more with you. Is the United States leading the way in development of hypersonic glide vehicles or are we behind the curve relative to Russia and China?

General HYTEN. We are ahead in some areas, behind in other areas. So as a whole, I would say it is a competition, and it is a competition I believe that we should have a goal of winning that competition, not tying, not losing, but winning the competition. So that means the areas we are behind in—and I can talk about those in a classified setting—the areas they are ahead in we should accelerate further. We need to make sure that that becomes a priority for our nation to understand what that is, and then we have to figure out how to respond to it. The first way to respond to it is to be able to see the threat, which right now is challenging. So we have to build capabilities to see what the threat is as well.

Senator DONNELLY. Thank you.

In terms of that competition, as you look at Russia and China, is it that as we look forward, are we moving further ahead or are they closing in on us in terms of capabilities?

General HYTEN. They are closing in. I think we are still ahead. We are ahead significantly on the conventional side. I think we have stability with Russia on the nuclear side. We have an advantage with China on the nuclear side. But they are gaining ground quickly, especially when you look at space and cyber.

Senator DONNELLY. The Navy successfully demonstrated a conventional prompt strike missile last year that could become a sea-based capability in the future. What are the next steps for the development of a sea-based CPS [Conventional Prompt Strike] capability?

General HYTEN. The next step—you have seen it in the budget. The Navy has been given the program now. The Navy has to decide who is going to lead the program. So there is a joint task force underway involving the Navy, the Joint Staff, my command to look at the future of that program and to define it in 2019 so that we can execute the budget that we have put together. That work will be underway this summer and we will report out. Admiral Richardson, the CNO [Chief Naval Officer], is the lead on that. I talked to him about it the other day. He is committed to make sure that that comes across right because STRATCOM and other combatant commands have a valid need for that capability.

Senator DONNELLY. General, we have a new bomber, a new air-launched cruise missile, the life extension of our current ICBMs, a

new ICBM, a new SSBN [submersible ship ballistic missile nuclear-powered], warhead life extensions in our nuclear command and control systems. The Nuclear Posture Review adds to this potentially another warhead modification, a new submarine-launched cruise missile, any necessary modifications to the subs carrying the SLCM, and any warhead modifications necessary to arm it.

Can you give us a list from first to last of how you rank these because our concern is we do not have a budget that can accomplish even the portion that we all see as absolutely essential? We know there are things we need to do, and I was wondering if you have a list of how you put these in place.

General HYTEN. I do not have a list, Senator.

Senator DONNELLY. Is it that they are all critical?

General HYTEN. They are all critical. The most critical is the modernization of the triad, the big six that I talked about with Senator Peters a while ago. That is the most important piece of it. But everything in the Nuclear Posture Review that we talk about, everything that is in the budget is in response to a threat. So I cannot sit in front of the Senate, I cannot sit in front of Congress, I cannot sit in front of the President and say, yes, sir, because of that threat, we do not need this capability because the threat exists.

The only way I can change my recommendations to you is if we can change the threat, and I hope some day that threat changes. I hope it changes in Russia, China, North Korea, Iran. I hope those threats change, but if they do not change, I will sit in front of you next year and advocate for those capabilities because they are all in response to an existing threat to this nation.

Senator DONNELLY. In light of how critical all of those are and the budget challenges that we have as well, now more than ever we need to be sharing information, services, and parts across the Services to control cost and risk in this undertaking. Can I secure your commitment to find commonality between the Services and industry to try to reduce that cost and risk, that we are not reinventing the wheel in effect?

General HYTEN. So I am a combatant commander. So I need the capability. However, I am also a taxpayer. So I look for any way we can come up with commonality. I think there are ways to do that. But I will also point out that we have to be careful not create single point failures in the nuclear enterprise. So if we have everything common on the ICBM side and the SLBM side, that is actually not a good thing because now if one thing fails, we have lost two legs of the triad. So we have to be careful as we walk through that.

But I am working with Strategic Systems Program and Admiral Benedict and Admiral Richardson to try to figure out with the Air Force where elements of commonality should be. We have an effort going on inside the Nuclear Weapons Council to define the strategy for modernization in the future so we understand what those pieces are.

Senator DONNELLY. General, thank you for your service.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Donnelly.

Senator Kaine?

Senator KAINE. Thank you, Mr. Chair.

Thank you, General Hyten. I appreciate your being here today and your great service.

I was looking in your written testimony because I saw a phrase that interested me, and now I cannot find it.

General HYTEN. I am sure it was brilliant.

[Laughter.]

Senator KAINE. It was brilliant. It said there is no cyber war, there is no space war, there is just war.

General HYTEN. That is correct. It is one of the few things I get frustrated about is when I get a question how are you going to fight and win a war in space. How are you going to fight and win a war in cyberspace? It occurred to me a couple of years ago that there is no such thing. There is just war. In war, there may be an element of it that extends into space. There maybe an element that extends—but war is against an adversary. If you have to deal with the adversary and if we get attacked in space, for example, is the United States' response going to be a response in kind in space? In many cases, that might be the exact wrong response. We may want to respond in another domain.

Senator KAINE. But we ought to respond.

General HYTEN. But we ought to respond, but it should be focused on the adversary and what the adversary holds dear. If we hold space dear, maybe we will respond in some way that holds something the adversary holds dear. There is just war. There is just conflict.

Senator KAINE. General, on page 3, you go over in your testimony the global security environment, and you have this phrase in your paragraph about Russia. In June 2017, as part of an effort to destabilize Ukraine, the Russian military launched the most destructive and costly ever cyber attack in history. The effects of this attack spread globally and included devastating damage to U.S. businesses.

Is that war?

General HYTEN. I believe it is. I believe that war extends into cyberspace. I believe that our adversaries have figured out that that is part of the structure. War is against a nation state, and you attack the thing the nation state holds dear. Certainly I would hope that everybody in America holds our economic structure dear and holds our ability to live comfortably dear, holds our power grids dear, all those kind of things that could be attacked through cyberspace.

Senator KAINE. Should we hold our election systems as dear as we hold our economic capacity?

General HYTEN. I believe that any attack against our nation should be considered an attack that we have to respond to.

Senator KAINE. Including the Russian attack of 2016 against the election.

General HYTEN. I actually have talked to Admiral Rogers. I understand I believe it was. But I do not know exactly the relationship inside Russia about how that happened. All those kind of pieces are still to be worked.

Senator KAINE. If it was attributed to the Russian Government rather than just rogue elements, is it an act of war? We are not talking about cyber war, space war is an act of war.

General HYTEN. So it is the job of the United States Congress to declare war.

Senator KAINE. What if somebody takes action against us? We have not declared war on Russia. We had not in 2016. But when they took that action against the Ukraine, which you said was an act of war—I just asked you about that—because it effected the attack of a sovereign nation, on a sovereign nation, how about—I agree we had not declared war on Russia, but was Russia's effort to undermine the American electoral system, if it can be shown that it was with governmental imprimatur rather than rogue elements, would that be an act of war?

General HYTEN. So it would be an act of war by definition, but would we declare war? I would think not. I would think, however, that the United States would want to respond in some way to an attack on our nation.

Senator KAINE. So it would be an act of war by the Russians against us. Obviously, the Administration, Congress has the ability to decide what to do. I think that is important.

We had a hearing with Cyber Command, a very strong hearing with Admiral Rogers, a couple weeks back, and we were grappling with this. One of the worries that I think we have with a broad portfolio not only in Armed Services but we serve on other committees—we are dealing with the American election system; we are dealing with power grid; we are dealing with all kinds of things—is how do we protect the country. Admiral Rogers said, well, the protection of the election system really is more about how states run elections. Senator McCaskill said, you cannot expect the Secretary of State of Missouri to go head to head against the nation state of Russia if they want to attack the American election.

So we are depending upon our defense, DHS [Department of Homeland Security], and others to protect us, but we also have to be clear because if we are unclear what it is, then we will likely be unclear what our response should be.

General HYTEN. I think that is the challenge we have in cyberspace today. So I have given you my best military advice, my personal opinion. But as a nation, we have not made that decision yet.

Senator KAINE. Well, I would just say you call it out pretty clearly about what an attack on Ukraine is. I looked in that paragraph to see any reference to Russian attacks directly against the United States, and I did not see any. The one I saw was an attack against the Ukraine in June 2017 that affected American businesses. When I asked you about it, you said you thought that kind of attack of nation against nation vis-á-vis Ukraine was an act of war. I agree. We have to decide how seriously we will treat it.

On our side there has been some ambiguity about it, and I will say on the side of the last administration and this administration, there is real ambiguity. I do not know of a mayor or a governor who believes that the Federal Government is really going to have their back to protect their electoral system in 2018. They have not seen the signal sent that we are going to have their back. I think it something we should send.

Mr. Chair, I am over my time. Thank you.

Senator INHOFE. Thank you, Senator Kaine.

Senator Cruz?

Senator CRUZ. Thank you, Mr. Chairman.

General, welcome. Thank you for your service. Good to see you again.

In your written testimony, you stated "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."

Building on this point, as you know, currently America's missile defense systems are limited to ones that intercept missiles during the mid-course when the missile is coasting in outer space and in the terminal phase, once it has entered back into the atmosphere. But the Missile Defense Agency has noted, "Intercepting a missile in its boost phase is the ideal solution for a ballistic missile defense since destroying a missile during this phase of its flight precludes the deployments of any countermeasures and also prevents the missile warhead from attaining the velocity necessary to reach its intended target."

As you know, the greatest challenge in targeting during boost phase is that a missile is only in boost phase for a very few short minutes at the beginning of the flight. This requires sensors that are able to quickly detect a missile launch and relay targeting information. A study conducted by the Hudson Institute and a senior review group consisted of two former Missile Defense Agency directors, two former NORTHCOM commanders, the former Under Secretary of Defense for Policy, among others, stated that, "An SBI [Space-based Interceptor] capability would dramatically augment U.S. terrestrially and sea-based defensive capabilities, reduce the demand on current systems, and provide the United States with the optimal vantage point for destroying enemy missiles regardless of their launch or target location, whether on land, at sea, in the air, or in space."

Given the metastasizing nuclear threat from North Korea, given Iran's relentless pursuit of nuclear weapons, the growing development of anti-access/area denial capabilities in the Persian Gulf and the South China Sea, and great power competition in space, the case for urgently pursuing a space-based intercept capability has never been stronger.

Recent investments from China and Russia in missile technology like hypersonic glide vehicles that circumvent our current missile defense architecture further underscore the potential value of a space-based layer for the boost phase.

General, understanding that the MDR [Missile Defense Review] is forthcoming, can you share some of your views on the path forward for developing the architecture necessary to make boost-phase defense a reality here?

General HYTEN. So as the Commander of STRATCOM, I have been on the record as supporting the requirement for boost-phase intercept for the entire time I have been in command, and I have supported that for many years now. I would love to drop a missile

back on somebody's head that launched it. It is really that simple. I think there are multiple ways to do that.

I think the most important piece of the puzzle that you described is the sensor architecture that you need in order to target it. I am a huge supporter of building space-based sensor elements to be able to target against all of those capabilities, as well as hypersonic capabilities, other capabilities in the boost phase to get after a number of those issues.

The actual technical solution I am agnostic for. In my past, I have worked space-based interceptor solutions and spaced-based sensor solutions. I am convinced that space-based sensors are absolutely required. I am not convinced at this time that the space-based interceptor is required, but the requirement is there. I will advocate for that requirement. I think there are technologies that we can talk about in a classified session that can meet that. I think space is an element of that overall architecture, but the most important thing is the requirement for boost phase and left-of-launch. I think the Missile Defense Review will talk about that in more detail.

Senator CRUZ. What specifically is required? What is needed to get this accomplished, to make boost-phase intercept a reality?

General HYTEN. So I think that the Department has to decide to integrate the number of different programs that are out there. I think the leadership in the Department right now is the perfect leadership to do that. I know Dr. Mike Griffin. I know that he has looked at that technology in the past. He has only been in office now a few weeks, but that has been important to him for a long time. I think Secretary Lord, Secretary Shanahan, I think the Secretary of Defense support the boost-phase construct.

So I think what we are going to have to do this year is we are going to have to align all of the elements that are out there and make sure we realize it is not just the interceptor—it is coming up with the entire approach to dealing with boost-phase intercept—and get after that. Like I said the Missile Defense Review will get to it in much more detail.

Senator CRUZ. So what can or should this committee do?

General HYTEN. I think the key is look at the Missile Defense Review. The Missile Defense Review will describe the approach of the Nation and the Department on how to do that. Then we will have a discussion about, okay, what is good, what is bad, where do you disagree, and we will have that discussion as we go through the year. But we really need the Missile Defense Review to start that discussion.

Senator CRUZ. Very good. Thank you, General.

Senator INHOFE. Thank you, Senator Cruz.

Senator Blumenthal?

Senator BLUMENTHAL. Thanks, Mr. Chairman.

Talking about the boost phase intercept, you think this technology is doable and feasible and should be pursued.

General HYTEN. Senator, I think the technology is actually pretty straightforward. I think the policy discussions are much more complicated because in order to attack a missile in the boost phase, you have to commit to dropping something on adversary territory. Now, if we are in the middle of a war or the middle of a conflict, that

is really not a complicated decision. But if we are not and we want to make that decision, that is a very complicated policy discussion. We have not had a lot of discussion about the policy impacts of making a decision like that. But from a technical perspective, I think the technology is there.

Senator BLUMENTHAL. Thank you, General.

I have a question about helicopters. This issue is one that you and I have discussed.

General HYTEN. Yes, sir.

Senator BLUMENTHAL. In fact a year ago, as you may recall, I asked you about your frustrations with the Huey replacement program, and you said, "Of all the things in my portfolio, I cannot even describe how upset I get about the helicopter replacement program. It is a helicopter, for gosh sakes. We ought to be able to go out and buy a helicopter and put it in the hands of the people that need it, and we should be able to do that quickly. We have been building combat helicopters for a long time in this country. I do not understand why the heck it is so hard to buy the helicopter."

Do you still have the same frustrations with the Air Force's continued delays in fielding a replacement helicopter?

General HYTEN. I had a feeling somebody was going to quote me on that today, and I had a feeling it was going to be you.

So I have been working to try to get a helicopter in the hands of the folks in the missile fields for over a decade. That is where my frustration comes from. That frustration will not go away until the helicopter is in the hands of the people.

But the good news is the leadership, Dr. Roper, Dr. Griffin, Ms. Lord, Secretary Shanahan—they have taken it very seriously. We are in the middle of a source selection now. I hope contractor war is not imminent. There is a protest going on inside the source selection which limits how much I can talk about it. But the leadership of the Air Force, the leadership of the Department has taken it very seriously, and we are in the middle of a source selection now which is a good thing.

Senator BLUMENTHAL. Can you give us a date when you think it will be done?

General HYTEN. I cannot give you a date because of the protest right now. That is the piece that is still frustrating me. I would like to sit in front of you and give you a date saying here is where it is going to be.

The good news is that my air component commander, General Robin Rand, has put a number of adjustments into the Huey force in terms of fuel, in terms of armament, in terms of arms to allow them to do the job until that helicopter comes into being. So the operational risk that I was concerned about significantly last year has really been eliminated in the near term. But I do not have a date where I can tell you, Senator, and I wish I did.

Senator BLUMENTHAL. But that is still a concern that this aircraft, even with that short-term measure, still is incapable of meeting requirements to protect our ICBM fleet. Correct?

General HYTEN. Well, especially the movement of nuclear weapons. That is the key. I can tell you in a classified session what we have done in terms of arming, in terms of fueling to allow us to adequately protect the weapons. I am comfortable with that protec-

tion system that is in there right now. But the Huey is still ancient and it has got to be replaced. It has got to be replaced, and the sooner we can replace it, the better.

So I will continue to be demanding of my Air Force to deliver that capability. I can tell you the Chief, the Secretary, and the acquisition leadership have all committed to getting there as fast as we can. I hope that contract award is soon.

Senator BLUMENTHAL. I am concerned about the triad and American naval superiority. I attended the commissioning of the USS *Colorado* over the past weekend, a proud moment as all these commissionings and christenings are. Our undersea superiority is more important than ever for all the reasons that you have outlined so well in your testimony.

I am concerned about the ramping up, which I think has to come in the construction of both the *Ohio*-class replacement, the *Columbia,* and the *Virginia*-class, which requires the defense industrial base to be strong, worker training, and worker skills.

Would you agree that the worker training grants that are provided by the Federal Government play an important role in our national strategic superiority, that industrial base has to be trained, and the Federal Government has a role in funding it?

General HYTEN. The shipyards are a critical national asset to America. It is one of our strengths. That workforce is essential to us being able to build *Columbia,* to be able to build *Virginia.* I think it is the responsibility of all of us, including the Federal Government, to make sure that that workforce, which is a strategic asset, is supported across the board.

Senator BLUMENTHAL. When people talk about spending on our military security and our military budget, really our national security depends on that defense industrial base, as you just said.

General HYTEN. Every worker that is at a shipyard that is working on the *Columbia* is part of our national security infrastructure.

Senator BLUMENTHAL. Thank you.

Thanks, Mr. Chairman.

Senator INHOFE. Thank you, Senator Blumenthal.

Thank you very much, General Hyten, for your patience and your straightforward answers. We appreciate you very much.

With that, we are adjourned.

[Whereupon, at 11:16 a.m., the committee adjourned.]

QUESTIONS SUBMITTED BY SENATOR DAVID PERDUE

COLUMBIA-CLASS SSBNS

1. Senator PERDUE. General Hyten, initially, the Navy planned to build up to 12 new, *Columbia*-class, nuclear-armed SSBNs, to be in service by the early 2040s and serve well into the 2080s. However, the Nuclear Posture Review revised previous commitments to a fleet of 12 *Columbia*-class SSBNs to a fleet of "at least" 12 *Columbia*-class SSBNs. Do you believe we need more than 12 *Columbia*-class SSBNs?

General HYTEN. A force of 12 *Columbia*-class SSBNs provides the necessary survivability, performance, and flexibility to meet projected strategic deterrence requirements. However, as stated in the Nuclear Posture Review, the future international security environment remains uncertain and assumptions regarding deterrence requirements may change.

USSTRATCOM will continue to work closely with the Department and Service leadership to analyze the security environment and determine the capabilities needed across the Triad to counter emerging threats.

2. Senator PERDUE. General Hyten, if so, how many SSBNS would suffice our nuclear triad needs?

General HYTEN. Our Triad force requirements are determined by our strategic deterrence objectives and by the threat potential adversaries project. The Navy program of record for the *Columbia*-class SSBN is sufficient to meet projected deterrence requirements. As the strategic security environment continues to evolve, we will assess if any program changes are required.

3. Senator PERDUE. General Hyten, is the Navy prepared to procure more *Columbia*-class SSBNs as necessary?

General HYTEN. I respectfully refer you to the Navy for program acquisition questions.

4. Senator PERDUE. General Hyten, how will this impact the overall shipbuilding budget?

General HYTEN. I respectfully refer you to the Navy for any questions about impacts to their shipbuilding budget.

ADVANCED BATTLE MANAGEMENT & SURVEILLANCE (ABMS) VULNERABILITIES

5. Senator PERDUE. General Hyten, JSTARS is an airborne battle management, command and control, intelligence, surveillance, and reconnaissance platform that is currently housed aboard E–8C aircraft. As you know, the Air Force has zeroed-out its FY19 recapitalization of the JSTARS fleet, when just last year this platform was the number 4 acquisition priority of the Air Force. While I agree that we eventually need to move to the new "system of systems" in the future, I'm very concerned about the survivability and reliability of their proposed Advanced Battle Management & Surveillance (ABMS) to replace the airborne battle management of JSTARS, given Chinese and Russian progress in the space domain. The ABMS connect satellites, drones, ground sensors and manned surveillance aircraft seamlessly in real time across a fast-changing, dispersed combat area of operations. However, Russia has tested the PL–19 Nudol, its direct ascent anti-satellite missile, at least twice, in November 2015 and May 2016. China has conducted at least two anti-satellite tests, one in 2007 and another in 2013. Both are developing and to some extent have deployed technologies in directed energy, jamming, and cyber to counter satellite communications as well. Given our adversaries' emphasis on anti-space strategies, is their reason to be concerned about the Air Force's proposed ABMS's survivability? (If possible, I would appreciate a classified and unclassified response)

General HYTEN. Air Combat Command (ACC) is conducting an Advanced Battle Management Systems (ABMS) Analysis of Alternatives (AOA) assessing viability of multiple architectures (space & non-space). Until the AOA is complete, it would be premature for me to comment.

6. Senator PERDUE. General Hyten, are you working with the Air Force to address these potential survivability issues of the proposed ABMS? (If possible, I would appreciate a classified and unclassified response)

General HYTEN. Yes, USSTRATCOM is supporting ACC's AOA.

7. Senator PERDUE. General Hyten, where among these anti-satellite technologies are our adversaries most advanced?

General HYTEN. [Deleted.]

8. Senator PERDUE. General Hyten, are you concerned about US progress in space vis a vis our adversaries?

General HYTEN. Yes. Our adversaries have studied the way we conduct operations, have monitored U.S. statements highlighting the tremendous advantages provided to our military forces enabled by our space capabilities, understand our dependency on space, and are developing/demonstrating a wide variety of counter-space technologies with the clear intent to contest our operations from and through space.

The PB acknowledges the threat and makes initial investments to improve resiliency and incorporate self-defense measures into our future satellite architectures.

Additionally, DOD leadership has recognized the legacy requirement and acquisition models and processes do not support today's need to increase speed and innovation in response to the growing threats.

USSTRATCOM has also taken steps to operationalize space as a warfighting domain:

- The National Space Defense Center provides command and control for space warfighting operations and creates unity of effort among the DOD, IC, and interagency.

- The Joint Force Space Component Command, under Gen Raymond, builds a coherent, streamlined warfighting construct consistent with doctrine, enabling more effective command and control of forces and direct lines of authority.
- The DOD is preparing to submit to Congress a Space Warfighting Concept of Operations as directed in the Fiscal Year 2018 NDAA.

QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

MISSILE DEFENSE

9. Senator HIRONO. General Hyten, even though talks with North Korea regarding its nuclear weapon and missile programs are scheduled, North Korea has made significant progress in its programs since the last time you testified before this committee, and they remain a threat to both the mainland United States and Hawaii. Are you confident that our Missile Defense System, as it stands today, can protect the United States and its territories from North Korean ballistic missiles?

General HYTEN. Yes. I agree with the USNORTHCOM Commander and am confident the Ballistic Missile Defense System can protect the US and its territories from current NK ballistic missile launches.

10. Senator HIRONO. General Hyten, what about in the future?

General HYTEN. The threat is evolving and the ability to sustain our advantage demands a strong commitment to sustained future investments.

11. Senator HIRONO. General Hyten, what capabilities will we need to add to maintain our ability to defend against ballistic missiles?

General HYTEN. Our ability to defeat advanced ballistic missiles, associated countermeasures, cruise missiles and hypersonic glide vehicles requires continued Congressional support of PB investments in sensors (space & ground), improved kill vehicles, and both boost phase defense and left of launch capabilities.

HOMELAND DEFENSE RADAR-HAWAII

12. Senator HIRONO. General Hyten, there is a request in the fiscal year 2019 budget from the Missile Defense Agency for $62.2 Million in Research and Development funds for the Homeland Defense Radar-Hawaii (HDR–H). Can you explain in detail why that radar and its location in Hawaii is important for the future of missile defense, especially in Hawaii?

General HYTEN. The Hawaii radar location provides 24/7 persistent, enhanced tracking and discrimination capabilities against increasingly complex threats. These advanced capabilities significantly improve midcourse and Aegis ballistic missile defense interceptor capabilities against long range ballistic missile threats targeted at Hawaii. Additionally, HDR–H will serve a multi-mission role as a Space Situational Awareness sensor.

MAUI SPACE SURVEILLANCE SITE

13. Senator HIRONO. General Hyten, your written testimony goes into some detail regarding Space as both a warfighting domain and a critical enabler of other military capability. The Maui Space Surveillance Site (MSSS) run by the Air Force Research Laboratory provides both research and operational capabilities to create Space Situational Awareness that don't exist anywhere else in the world. The Memorandum of Understanding between the Air Force Space Command, National Reconnaissance Office, and Air Force Materiel Command that funds operations at MSSS is set to expire at the end of fiscal year 2018. I am concerned that the inability to renegotiate an MOU may result in the loss of a unique space surveillance capability. With more and more objects in space to track, how important is it to ensure that a facility such as the MSSS Site maintains its research and operational capabilities as space becomes an increasingly crowded and contested domain?

General HYTEN. The MSSS is an integral part of the Space Surveillance Network (SSN) designed to detect, identify, catalogue and track on-orbit man-made objects to facilitate safety of flight operations and/or provide warning of hostile actions in space.

MSSS hosts a unique mix of operational and research assets provisioned with visible and infrared sensors, adaptive optics, and telescopes to collect imaging and signature date on objects ranging from near-earth to deep space.

The geographic location and unique SSN capabilities provided by MSSS require continued sustainment and modernization.

I'm confident Air Force Space Command, National Reconnaissance Office, and Air Force Material Command understand the site's value and will conclude a fair and equitable MOU.

NATIONAL GUARD SPACE CONTROL SQUADRON

14. Senator HIRONO. General Hyten, I am aware that the Air Force is considering creating a new Space Control Squadron that may be allocated to the National Guard, and that the Hawaii Air National Guard is a finalist to host this squadron. Both Pacific Air Forces and PACOM support this squadron being established in Hawaii due to its location and access to national security space facilities. While I understand this is outside the scope of your current command, your long career in space matters, including command of Space Command, makes you a recognized expert on our military's space operations. Can you describe the advantages of having this capability within the PACOM AOR as well as bringing in the Air National Guard?

General HYTEN. Prepositioning space control assets within the PACOM AOR enables greater operational integration and training. This leads to a more effective ability to execute STRATCOM and PACOM's contingency plans against potential adversaries in the Pacific theater.

USSTRATCOM has not participated in the Space Control Squadron mission assignment analysis. Therefore, I must defer to the Air Force as to the advantages or disadvantages of Guard employment.

NUCLEAR COMMAND, CONTROL, AND COMMUNICATION (NC3) MODERNIZATION

15. Senator HIRONO. General Hyten, your written testimony describes a safe, secure, ready and reliable nuclear Triad as the bedrock of our deterrence. The Nuclear Command, Control and Communication infrastructure ties the National Command Authority to the operating nuclear forces, yet much of the NC3 architecture is decades old and dependent on Cold-War era platforms. Modernization of NC3 systems is critical to the reliability and safety of our nuclear deterrent yet technology is vastly since the last generation of NC3 systems was designed. How are you accounting for security and surety within the modernized NC3 system?

General HYTEN. [Deleted.]

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, MARCH 22, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

CHALLENGES IN THE DEPARTMENT OF ENERGY'S ATOMIC ENERGY DEFENSE PROGRAMS

The committee met, pursuant to notice, at 10:04 a.m. in Room SH–216, Hart Senate Office Building, Senator James M. Inhofe, presiding.

Committee Members present: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Cruz, Graham, Sasse, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Our hearing will come to order.

They are the force sitting right behind you, Rick. So you wave at them.

The committee meets today to hear testimony from the Department of Energy's atomic energy programs.

We welcome our witness, Energy Secretary Rick Perry, a good friend of all of ours.

The DOE [Department of Energy] houses a number of defense programs, such as the National Nuclear Security Administration and the Office of Environmental Management that are under the jurisdiction of the Armed Services Committee.

Even so, a hearing like this is rare. Our committee has not called a Secretary of Energy to testify for over 10 years. You ought to feel good about that.

Secretary PERRY. I am trying, sir.

[Laughter.]

Senator INHOFE. The DOE's defense programs, including the cleanup of nuclear waste, have gone without sufficient oversight.

Chairman McCain has asked that we read into the record a statement that he would like to make concerning this hearing today, so I am quoting. The Department of Energy's defense atomic energy programs are critically important to our national security. Unfortunately, in recent years, the DOE has run up a long list of

cost overruns, schedule delays, and violations of safety and security. Put simply, too often they have failed to meet mission requirements with billions of dollars in the DOE funding authorized by the NDAA [National Defense Authorization Act] each year. The Senate Armed Services Committee has the opportunity to conduct the kind of oversight that will help the Department correct course.

The fiscal year 2019 budget request for the NNSA [National Nuclear Security Administration] and the Environmental Management totals over $20 billion. That comprises about 70 percent of the Department of Energy's proposed budget for fiscal year 2019. It is up to us to ensure vigorous oversight of these taxpayer dollars.

Secretary Perry, it is a pleasure having you here.

Senator Reed?

STATEMENT OF SENATOR JACK REED

Senator REED. Well, thank you very much, Mr. Chairman.

Welcome, Mr. Secretary. Thank you very much.

The last Secretary of Energy to testify before the committee was Secretary Chu in 2010. The Augustine-Mies Commission which evaluated the effectiveness of the NNSA recommended in 2015 that the Secretary of Energy appear before the Senate Armed Services Committee on an annual basis. This appearance I hope fulfills that recommendation and becomes a recurring part of the committee's posture hearings given that the atomic energy defense funding in the Department of Energy totals approximately $19 billion, which is more than two-thirds of the Energy Department's fiscal year 2019 budget.

Secretary Perry, there are a number of issues I am hoping you will address today.

First and foremost is the ability of the Department and the NNSA to build 80 pits a year by 2030, as mandated by the 2014 National Defense Authorization Act. This requirement was ratified by the Department of Defense based on a series of modules to be built at Los Alamos after spending about $600 million to design a prior building there, whose costs became out of control and was canceled. The modular approach was also approved by the DOD [Department of Defense] and the NNSA and was authorized in the 2013 National Defense Authorization Act. I understand that you may again be reconsidering or considering a large building design rather than the modules. Since a single building approach failed in 2013, I am interested in your thinking on this issue.

Second, the Department is modernizing six weapon systems, and at the same time is modernizing an infrastructure that in some cases dates back to the Manhattan Project, which includes the NNSA uranium and the plutonium infrastructures. For fiscal year 2019, $3 billion, or about 20 percent of NNSA's overall budget, is dedicated to this effort. Maintaining momentum on modernization will be a daunting challenge, and I am interested in your views on sustaining this effort.

Third, I would like to know about the Department's plan to clean up the Hanford nuclear site. In 2014, after spending close to $8.3 billion at the Hanford site to treat approximately 55 million gallons of radioactive waste in 177 underground tanks, the Department paused its efforts to treat and turn into glass the waste in those

tanks. In addition, the Department now only intends to turn the low-activity waste into glass while leaving the high-level waste treatment, which is about 10 percent of the site, to a later date. I would like to know the status of the low-activity waste effort, when will you return to treating the high-level waste, and what is the estimated total cost.

Finally, I would like to know how the Department is addressing the flow of loose nuclear material particularly from Russia. In just one example, a British newspaper has reported on four thwarted attempts in Moldova to stop the sale of nuclear material on the black market. In some cases, the sale is linked to Russia and buyers were linked to extremists in the Levant region. Proliferation of nuclear materials is one of the greatest threats facing our Nation, and I hope is the top focus of the Department of Energy.

Again, I look forward to your testimony today and hope this becomes an annual event for this committee. Thank you, Mr. Secretary.

Senator INHOFE. Thank you, Senator Reed.

Secretary Perry, thank you again for being here, and we would like to have you give us your opening statement. Your entire statement will be made a part of the record. You are recognized.

STATEMENT OF THE HONORABLE J. RICHARD PERRY, SECRETARY OF ENERGY

Secretary PERRY. Chairman Inhofe, thank you, to each of the members. Some of you I have worked with through the years. It is always good to see a governor or two in the crowd. Mike and Governor Shaheen, thank you for your kindness. It is my honor, Ranking Member Reed, others to be in your presence, and at your request, I will be here as often as you need me, sir. So I hope I can answer your questions, discuss this very important issue with you today, and in a succinct way, as we talk about the President's 2019 Budget request for the Department of Energy.

But before I get started, I just want to share with you I had a wonderful conversation yesterday, a phone call, with Chairman McCain. He was lively, focused. Anyway, he sent his regards and said that you would ably chair the committee, Senator Inhofe. Anyway, it was good to talk to him. Certainly I know I think all of you keep him in your prayers and wish the best to him and his family.

Mr. Chairman, this budget request capitalizes on the Department of Energy's scientific capabilities to advance our nuclear security, support our nuclear Navy, and reduce the threat of nuclear terrorism. It also confirms our commitment to clean up the environmental legacy of America's past efforts to maintain nuclear security. I appreciate this committee's steadfast support for these missions as they pertain to our efforts, past and present, to keep America safe and strong.

I firmly believe that we have a moral obligation to protect the American people from adversaries who are wishing to do us harm. For the past 70 years, our government has advanced this goal by maintaining our nuclear deterrent.

The Department of Energy's role in our national security is one I undertake with utmost seriousness. In the last year, I visited our national security facilities at Los Alamos, Pantex, Y–12, Kansas

City. Next week, I am going to have the pleasure to go out west to Sandia and Lawrence Livermore. For these visits, I have identified key challenges facing our Department and its national security mission.

First, through DOE's National Nuclear Security Administration, NNSA, we need to ensure that our nuclear strategy responds to the threats of today while anticipating those of tomorrow.

Second, through our Office of Environmental Management, we need to increase the pace of cleaning up the legacy resulting from decades of nuclear weapons production. We aim to address both challenges through our partnership with our national laboratories. Those crown jewels are, I think, irreplaceable. They are clearly great incubators of innovation.

The 2019 $30.6 billion budget request for the Department meets both of those needs that I have just pointed out.

When it comes to our nuclear posture, we have long embraced a two-pronged strategy of deterrence and nonproliferation. We have sought to deter aggressors by maintaining a powerful nuclear arsenal and infrastructure, and we have sought through nonproliferation to prevent those foes from gaining such weapons for themselves or providing them to others.

But since the end of the Cold War, we have not kept pace with rising threats to our nation and its allies. These include threats from borderless enemies and the potential sale of nuclear materials to bad actors. They also include new challenges from Russia and China who are upgrading their nuclear capabilities and, of course, the challenge posed by North Korea.

Mr. Chairman, let me pause for a moment and just say thank you to you specifically, the committee as a whole. This committee understands that we have to keep pace with modernization. You understand that we have deferred maintenance for too long, that it is going to take a multiyear approach to get us back to a position of strength. Thankfully with your help, our administration is starting to turn the corner on this arena. Coupled with the National Security Strategy, the President's recently released Nuclear Posture Review, it reaffirms our nuclear triad as the bedrock of the Nation's deterrent. This strategy necessitates that our capabilities be more robust, more resilient, and more flexible than ever before.

The President's Budget provides the resources to do exactly that. This budget will help us modernize our nuclear forces by extending the life of existing warheads, replacing them with systems that use today's technologies. It will ensure the safe and reliable operation of our nuclear-powered submarines and aircraft carriers and meet the Navy's requirement for modernized nuclear propulsion. It will help us replace our aging nuclear security infrastructure, much of which dates back to the Eisenhower administration, and it will keep nuclear weapons out of the wrong hands by aiding in nonproliferation efforts.

While the President's Fiscal Year 2019 Budget request provides much needed resources for our nuclear security enterprise, we must be mindful that those resources are not unlimited, and we have a responsibility to the American taxpayers.

I recently visited the Savannah River site, and it is a national asset, populated with some amazingly capable, patriotic men and

women. Savannah River is a critical partner in our national security and our environmental management missions, and it has a very bright future ahead of it.

We have a solemn moral duty to address the environmental legacy left at the sites, which produced the materials that helped us end a world war and to secure the peace. We also have a moral duty to the taxpayers to use scarce resources wisely, effectively.

I will report to you that our Environmental Management has made undeniable progress in advancing its mission. It has completed cleanup activities in 91 sites in 30 States. However, there is still a lot of work to be done, and Mr. Chairman, we are committed to doing it. We will commission and start up the salt waste processing facility at Savannah River. In addition to our work at Savannah River, we will continue our progress at Hanford. We will ramp up activities to increase shipments of transuranic waste to Senator Heinrich's district out at WIPP [Waste Isolation Processing Plant]—for his State. Excuse me. We will complete design and initiate construction of the Oak Ridge mercury treatment facility, and we will continue to press forward with tackling these aging and excess facilities in some cases at various sites.

I want to thank you again for your hospitality and for your continued support of our mission and for having me here this morning. I will attempt to answer your questions, as you have them, sir.

[The prepared statement of Secretary Perry follows:]

PREPARED STATEMENT BY SECRETARY RICK PERRY

Chairman McCain, Ranking Member Reed, and Members of the Committee, it is an honor to appear before you on behalf of the Administration and the Department of Energy ("the Department" or "DOE"). I appreciate the Committee's strong support for DOE's enduring national security and environmental management missions and the opportunity to testify in support of the President's Budget request for fiscal year (FY) 2019.

Since my confirmation a little over a year ago, two of my highest priorities have been to refocus the Department on restoring the nuclear security enterprise and enhancing national security through the military application of nuclear science, while also addressing the issue of legacy management and nuclear waste.

While DOE is making solid progress, there still is much to be accomplished. We live in an evolving international security environment that is more complex and demanding than any since the end of the Cold War, which necessitates a strong national commitment to maintain modern and effective nuclear forces and infrastructure. To remain effective, it is critical that we modernize and recapitalize our nuclear forces.

The U.S. nuclear deterrent has been the cornerstone of the United States' strategy to keep the American people safe and secure for more than 70 years, as well as a significant contributor to global stability. U.S. nuclear capabilities make critical contributions to one of our nation's highest priorities, the deterrence of nuclear and non-nuclear aggression.

The Department's enduring national security and environmental management missions are accomplished through the hard work and dedication of the highly-skilled men and women of the National Nuclear Security Administration (NNSA) and Office of Environmental Management (EM). NNSA is responsible for: maintaining the safety, security, reliability, and effectiveness of the nuclear weapons stockpile; reducing the threat of nuclear proliferation and nuclear terrorism around the world; and providing nuclear propulsion for the U.S. Navy's fleet of aircraft carriers and submarines. The mission of EM is the safe cleanup of the environmental legacy of five decades of nuclear weapons development and government-sponsored nuclear energy research.

NNSA achieves its critical mission, in part, through a robust, healthy partnership with DOE's National Laboratories. There is close collaboration between the national laboratories and NNSA on several fronts including supercomputers, cybersecurity,

and basic science, which help advance nuclear deterrence, naval reactors, and nonproliferation missions.

In addition, the Department works jointly with the Department of Defense (DOD) through the Nuclear Weapons Council (NWC), which serves as the focal point for interagency activities to maintain the U.S. nuclear weapons stockpile. DOE's partnership with DOD ensures that our deterrent is modern, robust, flexible, resilient, ready, and appropriately tailored to deter 21st Century threats and reassure our allies and partners. In this partnership, DOE provides the weapons and DOD provides the delivery systems. DOE/NNSA oversees the research, development, test, assessment, and production programs that respond to DOD's military requirements.

ACCOMPLISHMENTS IN THE PAST YEAR:

Thanks to strong support from the Administration and Congress, over the past year, DOE has seen a move toward increased investment in its nuclear security mission. From flight qualification tests of the B61–12 in the Nevada desert, to the removal of highly enriched uranium (HEU) in Ghana and Kazakhstan, to the commissioning of a new class of nuclear-powered aircraft carrier, DOE has lent its world-class expertise to the military application of nuclear science to help keep the United States safe and secure. Here are a few examples:

- Last year, NNSA continued to maintain the safety, security, and effectiveness of nuclear weapons through the Stockpile Stewardship Program (SSP), enabling the Secretary of Defense and me to certify to the President once again the reliability of the nuclear weapons stockpile.
- In November 2017, NNSA published the Fiscal Year 2018 Stockpile Stewardship and Management Plan (SSMP), a detailed report on the programs, scientific tools, capabilities, and infrastructure necessary to ensure the success of NNSA's nuclear weapons mission well into the future.
- Throughout the year, NNSA actively participated in the recently released Nuclear Posture Review (NPR). The NPR was directed by the President and led by the Department of Defense to ensure that America's nuclear deterrent is modern, robust, flexible, resilient, ready, and appropriately tailored to deter 21st Century threats and reassure our allies and partners.
- The Uranium Processing Facility (UPF) project continues to make timely progress with the recent completion of the Site Infrastructure and Services subproject, two months ahead of schedule and $18 million under budget. Of the five remaining subprojects, two are underway and the final three will begin later this year. The Department is committed to delivering UPF by 2025 for no more than $6.5 billion, assuming stable funding through the duration of the project.
- Working with the State of Missouri, NNSA transferred excess federal property at the Bannister Federal Complex in Kansas City to private developers. The transfer will save taxpayers hundreds of millions of dollars and will lead to further community development.
- NNSA partnered with the Institute of Nuclear Physics (INP) in Kazakhstan to remove its remaining HEU. NNSA has helped remove or down-blend 200 kilograms of Russian-origin HEU from the INP, enough for eight nuclear weapons.
- EM realized a significant accomplishment with resumption of waste shipments and emplacement at the Waste Isolation Pilot Plant (WIPP) in New Mexico. WIPP received approximately 130 shipments from April 2017 through December 2017.

BUILDING A STRATEGIC CAPABILITY

DOE is building on the previous year's achievements with new activities tailored to 21st Century threats. With the recent release of the 2018 NPR and the President's National Security Strategy, we are laying the foundation for strategic capabilities that will enable us to fulfill our national security and environmental management missions.

The 2018 NPR reaffirmed the findings of previous reviews that the nuclear triad—comprised of silo-based intercontinental ballistic missiles, bomber aircraft, and nuclear submarines—is the most strategically sound means of ensuring nuclear deterrence. To remain effective, however, we must recapitalize our Cold War legacy nuclear deterrence forces, continuing a modernization program initiated during the previous Administration.

The NPR considers the path ahead for the U.S. nuclear strategy and posture over the longer term, and states that we will pursue initiatives to ensure the necessary capability, capacity, and responsiveness of the nuclear weapons infrastructure and the needed skills of the nuclear enterprise workforce. We will continue to work with DOD to determine the resources, time, and funding required to address policies laid

out in the NPR, including the potential low yield ballistic missile warhead, sea launched cruise missile, and B83–1 gravity bomb. NNSA will work with Congress to ensure that the program of work is properly authorized and funded.

MODERNIZING OUR NUCLEAR FORCES:

The Department is modernizing our nuclear enterprise to ensure that we have the scientific, engineering, and manufacturing capabilities necessary to maintain an effective and safe nuclear triad and respond to future national security threats.

Unique, state-of-the-art capabilities for research, development, testing, evaluation, and production enable this critical effort. In coordination with DOD, we have fully integrated the scope, budgets, and schedules of the life extension programs (LEPs), infrastructure modernization, and nuclear delivery systems.

We are making significant progress in the full set of LEPs while remaining aligned with the DOD through the NWC.

- *W76–1 LEP:* The $113.9 million requested for the W76–1 LEP directly supports the sea-based leg of the nuclear triad by extending the service life of the original W76–0 warhead. With continued funding, the W76–1 LEP will remain on schedule and on budget to complete production in fiscal year 2019. The W76–1 will have an extended life of approximately 30 years.
- *B61–12 LEP:* NNSA continues to make progress on the B61–12 LEP that will consolidate four variants of the B61 gravity bomb. This LEP which is in the Production and Engineering Phase, will meet military requirements for reliability, service-life, field maintenance, safety, and use control while also addressing multiple components nearing end of life in this oldest nuclear weapon in the stockpile. NNSA will remain on schedule to deliver the First Production Unit (FPU) of the B61–12 in fiscal year 2020.
- *W88 Alteration 370 Program:* Currently in the Production Engineering Phase, the W88 Alt 370 is on schedule, with FPU planned in December 2019. The budget request for this program, which also supports the sea-based leg of the nuclear triad, is $304.2 million in fiscal year 2019.
- *W80–4 LEP:* The current air-launched cruise missile delivers a W80 warhead first deployed in 1982. Both the missile and the warhead are well past their planned end of life. To maintain this vital deterrent capability, NNSA, in close coordination with DOD, has requested $654.8 million in fiscal year 2019, an increase of $255.7 million, or 64.1 percent over the fiscal year 2018 request to extend the W80 warhead, through the W80–4 LEP, for use in the Air Force's Long Range Stand-Off (LRSO) cruise missile.
- *W78 Replacement Program:* The W78 replacement program will replace one of the oldest warheads in the stockpile, and provide improved warhead security, safety, and use control. To replace the W78 warhead, NNSA has requested $53.0 million to support the scheduled restart of the feasibility study and design options work suspended in 2014.

Recapitalizing Our Cold War Era Infrastructure:

DOE/NNSA's diverse national security missions depend on its extensive, complex, and in many cases antiquated infrastructure. More than half of NNSA's facilities are over 40 years old, roughly 30 percent date back to the Manhattan Project era, and nearly two-thirds are rated as less than adequate to meet mission needs. NNSA is long overdue to build a modern, safe, streamlined complex that will meet mission requirements, keep the deterrent safe, secure, and effective, and enhance employee and public safety. We cannot accept this risk in an uncertain and evolving global security atmosphere.

As reaffirmed in the NPR, an effective, responsive, and resilient nuclear weapons infrastructure is essential to the U.S. capacity to adapt flexibly to shifting requirements. Such an infrastructure will offer tangible evidence to both allies and potential adversaries of U.S. nuclear weapons capabilities and can help deter, assure, hedge against adverse developments, and discourage adversary interest in arms competition. These investments will include:

- An enduring capability and capacity to produce plutonium pits at a rate of no fewer than 80 pits per year by 2030. A delay would result in the need for a higher rate of pit production at higher cost.
- Reconstituting the U.S. capability to produce lithium compounds that are sufficient to meet military requirements.
- Fully funding the UPF and ensuring availability of sufficient low-enriched uranium and the necessary reactor capacity to produce an adequate supply of tritium.

- The full capability to develop and manufacture secure, trusted strategic radiation-hardened microelectronic systems beyond 2025 to support nuclear weapon modernization.
- Pursuing the Stockpile Responsiveness Program established by Congress will expand opportunities for young scientists and engineers to advance warhead design, development, and production skills.

In 2015, NNSA developed new methods to prioritize investments to improve infrastructure. With support from Congress, it successfully halted the growth of deferred maintenance in fiscal year 2016 and 2017 for the first time in nearly a decade. NNSA is implementing innovative management tools that are data-driven and risk-informed, and are creating a science-based infrastructure stewardship approach to change the way NNSA manages infrastructure.

EM's fiscal year 2019 budget request includes $150 million to continue decontamination and decommissioning of selected high-risk facilities not currently in the EM portfolio at the Y–12 National Security Complex and Lawrence Livermore National Laboratory. Decontamination and decommissioning of these facilities support the national security missions at these sites. DOE's disposition effort will stabilize degraded relatively high risk facilities, characterize their hazards and conditions, remove hazardous materials, place them in the lowest risk condition possible, and eliminate the risk posed by these facilities demolishing them and disposing of the resulting waste. With a vision to modernize, streamline, and sustain the infrastructure, Department's goal is to maximize the benefits of the resources provided. However, additional improvements are needed to ensure our infrastructure provides the responsiveness and reliability necessary to support evolving mission requirements.

PREVENTING GLOBAL NUCLEAR THREATS:

Effective nuclear non-proliferation and arms control measures can support U.S., allied, and partner security by controlling the spread of nuclear materials and technology; placing limits on the production, stockpiling, and deployment of nuclear weapons; reducing misperception and miscalculation; and avoiding destabilizing nuclear arms competition.

NNSA's Office of Defense Nuclear Nonproliferation (DNN) works with international partners to remove or eliminate vulnerable nuclear material; improve global nuclear security through multilateral and bilateral technical exchanges and training workshops; help prevent the illicit trafficking of nuclear and radiological materials; secure domestic and international civilian buildings containing high-priority radiological material; provide technical reviews of U.S. export license applications; conduct export control training sessions for U.S. enforcement agencies and international partners; strengthen the International Atomic Energy Agency's ability to detect and deter nuclear proliferation; advance U.S. capabilities to monitor arms control treaties and detect foreign nuclear programs; and maintain organizational readiness to respond to and mitigate radiological or nuclear incidents worldwide.

With the release of the NPR, DNN will continue its efforts to 1) minimize the number of nuclear weapons states; 2) deny terrorist organizations access to nuclear weapons and materials; 3) strictly control weapons-useable material, related technology, and expertise; and 4) support the State Department to make sure arms control agreements enhance security, and are verifiable and enforceable.

COUNTERING GLOBAL NUCLEAR THREATS:

NNSA's counterterrorism and counterproliferation program is part of broader U.S. Government efforts to assess the threat of nuclear terrorism and develop technical countermeasures. The scientific knowledge generated by this program underpins the technical expertise for disabling potential nuclear threat devices, including improvised nuclear devices; supports and informs U.S. nuclear security policy; and guides nuclear counterterrorism and counterproliferation efforts, including interagency nuclear forensics and contingency planning.

Nuclear counterterrorism and counterproliferation provides a flexible, efficient, and effective response capability for any nuclear/radiological incident in the United States or abroad by applying the unique technical expertise across NNSA's nuclear security enterprise. Appropriately trained personnel and specialized technical equipment are ready to deploy in order to provide an integrated response for radiological search, render safe, and consequence management for nuclear/radiological emergencies, national exercises, and security operations for large National Security Special Events.

The Office of Counterterrorism and Counterproliferation (CTCP) maintains an operational nuclear forensics capability for pre-detonation device disassembly and examination, provides operational support for post-detonation assessment, and co-

ordinates the analysis of special nuclear materials. Readiness is maintained to deploy device disposition and device assessment teams, conduct laboratory operations in support of analysis of bulk actinide forensics, and deploy subject matter expertise and operational capabilities in support of ground sample collections that contribute to conclusions in support of attribution.

With the release of the NPR, the United States will continue to hold fully accountable any state, terrorist group, or other non-state actor that supports or enables terrorist efforts to obtain or employ nuclear devices. CTCP will strive, under a multilayered approach, to counter terrorist efforts to acquire, transfer, or employ nuclear weapons, material, technology, and expertise.

MOVING FORWARD WITH NEW SCIENTIFIC ADVANCEMENTS:

Science underpins everything we do, including our core responsibility to certify the safety, security, and effectiveness of the nuclear stockpile in the absence of nuclear explosive testing. DOE's world-class research, development, testing, and engineering are the key to this success. Through the science-based Stockpile Stewardship Management Program, we are fielding a suite of innovative experimental platforms, diagnostic equipment, supercomputers, and modern codes that build on past nuclear explosive test data to simulate the dynamics of nuclear weapons.

With the Department as a world leader in computational capability, and four of the ten fastest supercomputers in the world located in NNSA's laboratories, it is clear that high performing computers (HPCs) are a critical component of the national security, energy, and science missions of the Department of Energy. Over the past six decades, U.S. computing capabilities have been maintained through continuous research and development and the deployment of new computing systems, with rapidly increasing performance on applications of major significance to government, industry, and academia. Maximizing the benefits of high performance computing in the coming decades will require an effective national response to increasing demands for computing power, emerging HPC technological challenges and opportunities, and growing economic dependency on and competition with other nations.

In 2016, DOE initiated research and development activities designed to deliver an exascale (high speed) computing capability by the mid-2020s. The Department's Office of Science and NNSA are jointly responsible for executing a program that focuses on advanced simulation through a capable exascale computing program, with an emphasis on sustained performance on science and national security mission applications and increased convergence between exascale and large-data analytic computing.

To maintain the safety, security, and effectiveness of the Nation's nuclear deterrent, DOE/NNSA requires a trusted supply of strategic radiation-hardened advanced microelectronics (broadly defined), including R&D capabilities. The supply chain for nuclear weapon microelectronics must meet formal standards of trust to protect against the potential for sabotage, malicious introduction of an unwanted function, or subversion of a function without detection. The Microsystems Science & Technology Center at Sandia National Laboratories produces custom, strategic, radiation-hardened microelectronics for nuclear weapons. NNSA is examining options to extend the life of the Silicon Fabrication facility at Sandia beyond 2025 to help meet microelectronics requirements.

To ensure a diversified supply chain and provide risk reduction, NNSA intends to fund a demonstration project to produce R&D microsystems at the DOD-owned fabrication facility at Massachusetts Institute of Technology's Lincoln Laboratory (MIT/LL) to validate the production of radiation-hardened electronics at 90 nm. This investment would provide contingency and R&D options to NNSA, and would be conducted in collaboration with Sandia National Laboratories.

Additive Manufacturing (AM) uses the three-dimensional printing of polymers and metals to shorten production schedules and design cycles for a variety of applications. To date, the use of additive manufacturing has provided multi-million-dollar cost benefits and significant schedule risk reduction in utilizing AM for tools, fixtures, and molds in NNSA's ongoing major modernization efforts, as well as the testing and evaluation programs. NNSA is continuing to develop and mature this technology to expand its applications to the NNSA mission where appropriate. Ultimately, NNSA's goal for AM is to exploit its capability for rapid response to emerging threats while significantly shrinking the footprint and time required for manufacturing. While working to achieve this long-term objective, NNSA is actively using additive manufacturing to supplement our existing manufacturing capabilities in order to increase our research, development and manufacturing flexibility for the benefit of our nation's nuclear deterrent.

Cybersecurity is a high priority of the current Administration and the Department. The NNSA Stockpile Stewardship Management Plan calls for a strong cybersecurity program that implements a flexible, comprehensive information technology and cybersecurity system to ensure the protection of NNSA's classified and sensitive information assets related to the nuclear weapons stockpile. Adequate funding is crucial to managing cybersecurity risks across the nuclear security enterprise. NNSA will need to explore how technologies such as quantum computing and additive manufacturing influence the cyber threat landscape and manage risk accordingly. Conversely, NNSA will also need to explore how these technologies can be leveraged to combat cyber threats.

RESPONSIBLE STEWARDSHIP OF THE ENVIRONMENT

The government's nuclear weapons and nuclear energy research programs made significant contributions to our nation's defense. The Office of Environmental Management (EM) is tasked with the disposition of radioactive wastes; the management of spent nuclear fuel and special nuclear material; the cleanup of contaminated soil and water; and the decontamination and decommissioning of thousands of excess facilities. Since 1989, the federal government's investment in EM has resulted in a reduced risk that these materials and excess facilities may pose to the American people and the environment.

EM has completed cleanup activities at 91 sites across 30 states—with cleanup work remaining at 16 sites across 11 states. The remaining work is complex and challenging, and accomplishing the Department's cleanup goals will mean applying innovative strategies to one-of-a-kind challenges while ensuring the work is safely completed.

In 2017, EM made significant progress including the following:

- At WIPP, waste emplacement resumed and, to date, the repository has received more than 12,000 shipments of transuranic (TRU) waste for safe disposal.
- At Hanford, the Department safely and successfully completed remediation of the 618–10 burial ground, as well as continued to make progress on the Waste Treatment and Immobilization Plant.
- At Los Alamos National Laboratory (LANL), workers safely and successfully completed treatment of a set of nitrate salt drums to prepare for disposal of these drums at WIPP.
- Idaho workers completed a near-15-year effort to retrieve 65,000 m3 of TRU waste.
- At Oak Ridge, the Department broke ground on the Mercury Treatment Facility, which will enable EM to carry out additional cleanup activities at the Y–12 National Security Complex.
- At the Savannah River Site, the Department completed the construction of the 33 million-gallon Saltstone Disposal Unit 6.

Over the past year, EM has continued to look for innovative ways to perform its cleanup mission in a safe and efficient manner while serving as a good steward of taxpayer resources.

The EM mission not only addresses cleanup of the environment, but also helps the Department continue its important national security and scientific and energy research missions. The new alignment of the Offices of Science and EM reporting to the Under Secretary for Science will add momentum to environmental cleanup. By further leveraging the expertise of the DOE National Laboratories, and exploring various Science and EM project management and contract approaches, the Department hopes to manage costs better and solve environmental management challenges, while ensuring the highest level of safety for Federal and contractor employees, the public, and protection of the environment.

Workforce Safety

DOE and EM are committed to ensuring the safety of our workforce, the public and protection of the environment. Safety is the top priority for the Office of Environmental Management. I am proud to say that EM has a lower rate of worker accident-related statistics than the Department of Energy as a whole and industries that perform similar work. We are also strongly committed to a workplace where all workers—federal and contractor—are free to speak out, voice concerns or lodge complaints without fear of retaliation.

Project Management

The processes the Department has established for capital asset projects continue to mature and have brought significant improvements to the rigor and consistency in how EM oversees management of capital projects.

In 2017, the Project Management Institute (PMI) also recognized EM's track record of success. At Hanford, PMI recognized the AY–102 tank recovery effort as its international project of the year after the site completed work ahead of schedule and $8.7 million under budget. PMI also recognized the Savannah River Site's successful eighth underground liquid tank waste closure.

Regulatory-Cleanup Commitments

Generally, EM has worked successfully with state and Federal regulators in negotiating, updating and improving compliance agreements. The Department is actively working to meet its commitments. To the extent that milestones are delayed, DOE will follow the provisions in its cleanup agreements for making notifications and working with federal and state regulators regarding schedule adjustments if necessary.

REQUIREMENT AND RETENTION OF HIGHLY QUALIFIED PEOPLE

The Departments greatest asset will always be its workforce. DOE's challenging national security missions require it to recruit, train, and retain highly skilled and dedicated federal employees and Management and Operating (M&O) workforce. DOE and Congress must continue to provide these highly-talented men and women with the tools necessary to support their work as they carry out complex and challenging responsibilities.

The government-wide security clearance backlog is particularly acute at NNSA, where over 3,500 current employees are awaiting completion of their initial investigations and are unable to perform the duties for which they were hired. This number includes over 30 individuals designated as mission critical. NNSA has undertaken several measures to mitigate the impact of these delays and is working with the National Background Investigation Bureau to expedite mission-critical background investigations. However, more needs to be done. This backlog is making it difficult to recruit the technical talent we need in our highly classified programs essential to DOE/NNSA missions.

A skilled federal workforce is required for appropriate program and project oversight as NNSA enters the next phase of nuclear modernization efforts, including LEPs and major infrastructure project management. However, as of February 2018, NNSA on-board staffing levels were 10 percent lower than fiscal year 2010 Full Time Equivalent (FTE) levels, while funding increased 50 percent in the same period for Weapons Activities and Defense Nuclear Nonproliferation, primarily for the nuclear modernization program. To help manage growing program requirements, NNSA's fiscal year 2019 request includes funding for additional federal FTEs.

Succession planning is an important part of NNSA workforce planning, since 44 percent of the current NNSA workforce will be eligible to retire by fiscal year 2023. Thus, NNSA uses career developmental initiatives such as the NNSA Graduate Fellowship Program, and the U.S. Office of Personnel Management (OPM) Pathways and Presidential Management Fellows programs to recruit, hire, and retain the federal workforce needed for the NNSA national security mission. Working with OPM experts, NNSA is developing a Human Capital Management Plan that will institutionalize a consistent staffing analysis and career development methodology to support NNSA's mission and address projected retirements.

FISCAL YEAR 2019 BUDGET REQUEST

The President's Budget for Fiscal Year 2019 requests $30.6 billion for the Department of Energy to advance U.S. national security and economic growth through transformative science and technology innovation that promotes affordable and reliable energy through market solutions and meets our nuclear security and environmental cleanup challenges. The fiscal year 2019 budget request provides: $15.1 billion to modernize and restore the nuclear security enterprise, a $2.2 billion increase over fiscal year 2017 enacted levels, which makes necessary investments consistent with the NPR and National Security Strategy; and, $6.6 billion to continue our commitment to cleaning up the Cold War nuclear legacy.

This budget request demonstrates the Administration's strong support for NNSA and EM. Decades of underfunding has left the nuclear security enterprise's infrastructure in a brittle state that requires significant and sustained investments over the next decade to correct. There is no margin for further delay in modernizing NNSA's scientific, technical, and engineering capabilities, and recapitalizing our infrastructure needed to produce strategic materials and components for U.S. nuclear weapons.

The fiscal year 2019 budget request for NNSA's Infrastructure and Operations is $3.0 billion, an increase of $199.6 million, or 7.1 percent above the fiscal year 2018

request. The request provides funding to sustain, operate, and modernize the NNSA enterprise. The fiscal year 2018 National Defense Authorization Act provided NNSA and its M&O partners with added flexibility to address the challenges of modernizing the enterprise by increasing the minor construction threshold to $20 million. This reform supports efforts to address deferred maintenance through recapitalization projects that improve the condition and extend the design life of structures, capabilities, and systems to meet NNSA's nuclear weapons and nonproliferation program needs.

The fiscal year 2019 budget request for EM provides the resources to make progress on cleanup activities across the complex. At the Savannah River Site, the request will enable DOE to increase significantly the production of canisters of vitrified high-level waste at the Defense Waste Processing Facility, as well as support planned operation rates for the Salt Waste Processing Facility, and continued construction progress for necessary Saltstone Disposal Units. As a result, Savannah River will be able to build substantially on its record of successfully emptying and closing underground waste tanks.

The WIPP investment the request supports will have wide-ranging benefits across the EM program, with the planned infrastructure improvements at WIPP intended to enable increased TRU waste shipments from other EM sites.

We will continue to make steady progress on those portions of the Hanford Waste Treatment and Immobilization Plant necessary to initiate tank waste treatment through the Direct Feed Low Activity Waste (DFLAW) approach; and complete design and launch site preparations for the Oak Ridge Mercury Treatment Facility, which will help address mercury contamination and aid in the eventual decontamination and decommissioning of deteriorating facilities at the Y–12 National Security Complex. We also will complete buried waste exhumation at the Idaho National Laboratory and continue with preparations to transfer cesium and strontium capsules at Hanford from wet storage to a dry storage configuration. We will also implement an interim measure to address chromium groundwater contamination at LANL.

PROJECT MANAGEMENT EXECUTION—SAFE QUALITY CONSTRUCTION ON BUDGET:

NNSA is driving continued improvement in contract and project management practices. This includes policies and procedures that employ rigorous analyses of alternatives (AOAs); provide clear lines of authority and accountability for federal and contractor program and project management; and improve cost and schedule performance.

Since 2011, NNSA has delivered its $1.4 billion project portfolio 8 percent under original budget.

NNSA fosters competition beyond the M&O contractors through "best value acquisition solutions." NNSA's diversified approach allows qualified contractors, other than the traditional M&Os, to compete in fixed price, non-nuclear contracts. Contractors have included the U.S. Army Corps of Engineers, the Tennessee Valley Authority, and others to meet mission requirements when a better value to government was demonstrated. The competition creates motivation among the parties to strive for exceptional performance, operate within budget, and execute on time.

Additional oversight of M&O contractors involves aligning contract structures and incentives with taxpayer interests to encourage further contractor performance. For example, the contract for the TRU Waste Facility at LANL was structured so the contractor could earn more fees if it delivered under budget. Conversely, the contractor could lose all fees and pay for the overrun if the project delivered over budget. This contract model proved successful, and the TRU Waste Facility was the first nuclear facility NNSA delivered under budget. We are using this model at other locations.

A final point on effectively managing and overseeing M&O contractor operations is that NNSA developed a systematic process to conduct independent third-party project peer reviews to ensure that all projects are tracking on budget and schedule. As part of this process, NNSA issued a 90 percent design policy requiring nuclear projects to achieve final design completion prior to starting construction. NNSA also has issued a Project Management Business Operating Procedure clarifying roles, responsibility, authorities, and accountability for the Programs, Field, and Functional offices across NNSA to ensure stakeholders are aligned to deliver safe quality construction on budget and schedule. Several of these policies and processes were later exported to the Department and codified in DOE Order 413, Program and Project Management for the Acquisition of Capital Assets.

CONCLUSION

DOE's diverse missions are critical to the national security of these United States: maintaining the safety, security, reliability, and effectiveness of the nuclear weapons stockpile; reducing the threat of nuclear proliferation and nuclear terrorism around the world; and providing naval nuclear propulsion to the U.S. Navy's fleet of aircraft carriers and submarines. By investing in our nuclear security enterprise and continuing our efforts to modernize our scientific, technical, and engineering capabilities and infrastructure, the Department will continue to meet its national security missions while supporting other national and international stakeholders that also use our national assets. We are mindful of our obligation to improve our business practices continually, be responsible stewards of the environment, and use in a responsible manner the resources that Congress and the American people have entrusted to us. The investments in our nuclear security and environmental management missions pay abundant dividends across the DOE mission, and for the American people.

Senator INHOFE. That is great, and I appreciate that very much.

We are going to have 5-minute rounds, and I am going to adhere to it myself.

I think you said it in your last few statements that we have catching up to do, and people do not realize that. You know, the Department of Defense recently completed its Nuclear Posture Review, and the administration's defense strategy and nuclear posture—they both highlight the acute threat that China and Russia are to us as peer competitors. Now, we are not used to that in America, but they are. We just got back from the South China Sea and we saw what they are doing with reclaiming land down there, and they are in the driver's seat in many parts. People question is it China or the United States who we should be partners with.

Secretary Mattis put it the best way. He said we looked reality in the eye as the world sees us as it is not as we wish it were. That fits in with the National Defense Strategy because nuclear weapons are an unavoidable part of our return to great power competition, whether we like that or not.

So we are talking about China and Russia in this part of our review.

I would just first ask you just to get this out of the way. Do you support the recommendations of the Nuclear Posture Review? Just yes or no?

Secretary PERRY. Yes, sir.

Senator INHOFE. Okay. That is good and I agree.

Now, I want you to elaborate on that only if there is time because I have two other questions I need to get out of the way first.

Both China and Russia have a robust nuclear arsenal and a triad. Now, we are talking about missiles and the bombers and submarines. In 2018, the Nuclear Posture Review recommends the development and procurement of a low-yield warhead for submarine-launched ballistic missiles. Now, this has become controversial, and I know there is honest difference of opinion at this table on this. Sometimes we talk about, well, we do have it now. We only have it with bombs. That would assume then a B–52 could get through, which I am not ready to assume. So the recommendation is to have this capability with the idea that if we ever got into something with Russia and they have a low-yield and we do not, it might put us in a position of having to respond with something that we would not want to start that could lead to mutual assured destruction.

I would just ask you, Secretary Perry, how does the NNSA plan to provide this capability?

Secretary PERRY. Senator, I will try to be very brief in this answer. This program will be a modification of the W–76 warhead using the existing components that we have. I respect the arguments on both sides of this, but I will say from my perspective is that I think it is necessary for us to go forward with this program to achieve our tailored deterrence objective. I do not think this raises the threshold for use of nuclear weapons. I think it will deter others, which is exactly from my perspective the role that we should have. We are working with DOD on the specific requirements, and obviously we will work with OMB [Office of Management and Budget] and this committee going forward for the necessary authorization to begin the engineering and production side of that.

Senator INHOFE. I think also people need to understand when they talk about low-yield, we are talking about up to 10 kilotons. Hiroshima was 15 kilotons. So we are talking about a lot of power and a lot of destructive power.

Back when they were putting together the deal, when John Kerry was, with the Iran deal, I was opposed to that all the way through. But the Joint Comprehensive Plan of Action was established to ensure that Iran's nuclear program would be exclusively peaceful. I think a lot of people are walking around now believing that they want to have their enrichment program. They do not want to use that as weapons but for energy, for peaceful reasons. Now, let us assume that they are right on that, which I do not think they are. The most significant flaw in this agreement is they have the sunset provisions where they ease after a period of years, and another flaw is that does not apply to ballistic missiles or terrorism activities.

In the short time that we have here, Secretary Perry, how can the United States mitigate proliferation potential in Iran after these provisions expire, if they go beyond the expiration date?

Secretary PERRY. Senator, I support the President's desire to put America in a stronger position relative to this agreement. My role, the Department of Energy's role is in a technical position. We are really not in the policy side of it. We will respect what you, this committee, Congress, and the President working together does relative to that.

Senator INHOFE. Thank you very much.

Senator Reed?

Senator REED. Well, thank you very much, Mr. Chairman.

Thank you, Secretary Perry.

The issue of proliferation is one that is critical, and one aspect of this that you have already been asked about on your visit to the House is you have been in discussions with Saudi Arabia about the transfer of nuclear technology for power production. But there are indications that there may be a waiver of the traditional standards we insist upon, which is no nuclear enrichment, the so-called gold standard. In fact, we have arranged with the UAE, the United Arab Emirates, in which they have to adhere strictly to the gold standard.

I think you already know that if such a deal was proposed where the Saudis would not be liable to and required to adhere to this standard, I would oppose it and I think many others would too. I just wanted to make that clear on the record, Secretary Perry.

Secretary PERRY. Yes, sir.

Senator Reed, I think it is really important to look at each of these agreements not in a vacuum but certainly with the specificity of what we are looking at here. I like to remind people that our choice is at this particular point in time, it appears to me either Russia or China is going to be a partner in building civil nuclear capability in the Kingdom of Saudi Arabia or the United States. I am very confident that the prior two have no requirements of nonproliferation. So I think it is really incumbent upon us to sit down to work as closely with the Kingdom to not only bring them into our fold from the standpoint of being able to build that for them, our technology, our jobs being created, et cetera, but also from having those additional protocols and the International Atomic Energy Agency with their ability to go in and make sure that they are in fact not involved in any activities that would be untoward.

I think it is important for us to negotiate in a powerful way, but recognizing that the alternative of who they are going to be doing business with is of great concern to me.

Senator REED. No. I appreciate that point. I think the proliferation dangers are so great that we should be able to wield all of the influence we have, which goes way beyond just this one transaction, to insist upon the same standards we applied to the Emirates, and there should be no difference.

Let me turn quickly to the issue of pit production. General Hyten was here testifying, and he was very, very clear that we need 80 pits by 2030. In 2013, after spending $600 million on a design at Los Alamos, both Congress, NNSA, DOD, and this committee agreed in 2014 that we have to go ahead and proceed with the modular facilities there. Frankly, we are in a rush to get those 80 pits done by 2030.

But now there is talk of sort of stopping and recalculating and looking at another approach. I just do not think we have the time to do that. So your comments.

Secretary PERRY. Yes, sir. Senator Heinrich and I have discussed this at length many times. I have been to Los Alamos and visited P–4 and the other facilities out there. It is populated with some extraordinary men and women. They have done fabulous work, pits 0 through 30. Los Alamos is going to be the center for plutonium excellence for as long into the future as there is a future. We are committed to that.

Zero through 30 will be done there. I think it does make some sense to have—we have been given the directive with this analysis of alternatives to take a look at with GAO [Government Accountability Office] best practices. You know, there were two options that were identified, Savannah River and Los Alamos. That engineering study has not been done yet, but when it does, we will report to you on a very timely basis. I think we know to get the job done, I think 2026 is when the calendar is for the 30 pits per year to be done. Then that 31 through 80—it is important for us to be able to send a clear message that we can get it done, we can get

it done on a timely basis and get it done in a way that the taxpayers' respect is thoughtful about their concerns.

Senator BLUMENTHAL. Thank you, Mr. Secretary. I might follow up with some questions about Hanford and otherwise. But thank you very much.

Senator INHOFE. Thank you, Senator Reed.

Senator Fischer?

Senator FISCHER. Thank you, Mr. Chairman.

Welcome, Secretary Perry.

The Nuclear Posture Review states the longstanding goal of building a responsive nuclear infrastructure but notes that despite being highlighted in all previous NPRs [Nuclear Posture Reviews], the United States has failed to make sufficient progress to achieve this objective.

Are you committed to making the necessary investments to ensure that we meet the Department of Defense's requirements and the objectives described in the Nuclear Posture Review?

Secretary PERRY. With Congress' blessing and funding, absolutely.

Senator FISCHER. Thank you.

Can you speak to how you will implement the NPR's recommendations and what steps you can take to ensure the goals of this Nuclear Posture Review result in real action when it comes to modernizing the nuclear complex?

Secretary PERRY. Well, I want to remind the committee that I just had the privilege of naming a new director or administrator, I should say, of the NNSA, Lisa Gordon-Hagerty, a brilliant, capable, and I might add, the first female that ever headed up that administration, that agency. She is very capable.

When you look at the work that has to be done—and I think we all recognize this is going to be multi-years. This Congress', this administration's, focus on the increase in funding I think was very important, whether it is the modernization of those warheads or whether it is the facilities. Again, I have not been to all of the facilities we have. I am en route to get to all of them.

But when I go to Oak Ridge and I am in facilities that were built in some cases before I was born—and that was a spell ago—then it becomes abundantly clear to me that both on the modernization side having the workforce, having the resources to dismantle in my home State of Texas with Pantex, being able to process those whether it is over in Senator Heinrich's district or whether it is at some of the other facilities, that is going to require a long commitment for as long as I am the Secretary of Energy and for years down the road. I hope that what we are doing today with this budget sends the message that modernization is a priority, dealing with these facilities is a priority, and putting America in a position to be stronger and do it in a way that our taxpayers recognize is very efficient.

Senator FISCHER. Thank you.

I was pleased to see in your opening statement that you committed to achieving the required production capacity of those 80 plutonium pits by 2030 and affirms that there is no margin for further delay in modernizing NNSA's capabilities and infrastructure.

Secretary Gordon-Hagerty, who I have strong confidence in, made similar points during a recent hearing that I chaired in the Strategic Forces Subcommittee, and I welcome that sense of urgency that you are both bringing to this important issue.

Since the Department of Energy's budget was finalized before the Nuclear Posture Review, do you anticipate seeking funding increases for the National Nuclear Security Administration, the NNSA, beyond the out-year projections included in this budget request in order to implement the NPR's objectives?

Secretary PERRY. I do not. I think that the budget that is—actually the omnibus that was finished last night, the 2019 budget is the appropriate amount of dollars. My commitment to you is that those dollars will be spent as efficiently, as effectively. As a former governor of a State and a manager of some pretty big line items, I hope I give some comfort to not only the governors that are represented around this table but to all of the members here that the management of the Department and into those

enterprises that are outside of Washington, D.C. will be run as efficiently, as effectively as they have ever been in their history.

Senator FISCHER. Thank you, sir.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Fischer.

Senator Shaheen?

Senator SHAHEEN. Thank you, Mr. Secretary, for being here. I think it is very important for this committee to have more insight into what you are doing at the Department of Energy to address our defense requirements.

There was a story in The New York Times on March 15th that was based on information provided by the Department of Homeland Security that talked about the Russian Government's series of cyber attacks targeting United States and European nuclear power plants, as well as water and electric systems. Separately on that day, there was also a story about a cyber attack on a Saudi petrochemical plant by the Iranian Government, or the suggestion was that it was the Iranian Government.

I wonder if you could talk about what you are doing within the Department of Energy to try and address cyber attacks and the threat of cyber attacks on our nuclear infrastructure.

Secretary PERRY. Senator, thank you. A year ago in front of some of my committees, I made the statement that cybersecurity was one of the priorities of the Department. That has not changed. If anything else, it is even highlighted more by those activities that you mentioned here.

As we looked at the administration, NNSA has some cyber work that they do and over at the enterprise level in the Forrestal building. We saw a lot of bifurcation, a lot of fragmentation, if you will. What I asked the administration to do was to come back with a plan where that we could really consolidate, we could focus, we could have as tight a process as possible to really focus on this issue of cybersecurity. As you well know, DOE is the sector-specific agency in the electrical side of things. So the grid, the reliability, the resiliency of that grid, attacks from cyber—all of that is statutorily in our house.

With all of that said, we laid out to you, to the Members of Congress, this concept called CESER, the acronym. It is Cybersecurity, Energy Security, and Emergency Response. We bifurcated the Office of Electricity. Those two have assistant secretaries now that are equal.

The reason I think this was wise from my perspective—it is certainly worth having a conversation about—to create a clear, important, and a chain of command on this issue of cybersecurity.

Senator SHAHEEN. I am sorry to interrupt. My time is running.

Secretary PERRY. I am sorry.

Senator SHAHEEN. I agree with you on the chain of command issue. I think that is very important.

What I am concerned about is whether we have a chain of command throughout the whole-of-government. Who do you report to or who is it throughout government who is taking charge of this issue? Do you know?

Secretary PERRY. When you say this issue, sector-specific it is DOE and it is me through my Under Secretary of Electricity who will be in charge of this.

I think what you are talking about, Senator, is do we have global relationship. And we do. We work very closely with the Department of Homeland Security. She also sits on the National Security Council.

Senator SHAHEEN. In terms of national security threats from cyber, it is the Department of Homeland Security who you understand to be in overall——

Secretary PERRY. But not in the electrical sector. There is a clear bifurcation, if you will, statutorily. DHS [Department of Homeland Security] has a role. They are very comfortable with that. They are working on it. We coordinate. We talk to them. We got a great relationship with DHS. But sector-specific when it comes to the electrical grid, when it comes to protecting that grid, when it comes to having a cyber effort in place for that, that is in the Department of Energy.

Senator SHAHEEN. Can you brief members of this committee about specifically what you are doing to address the potential for cyber attacks?

Secretary PERRY. In a smaller room.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Shaheen.

Senator Sullivan?

Senator SULLIVAN. Thank you, Mr. Chairman.

Mr. Secretary, good to see you again.

I appreciate your focus in your testimony here on the nuclear modernization issue. It is an important issue. I think it still remains—I hope it still remains—a bipartisan issue. You and I had the opportunity to present at a forum at the Reagan Defense Forum a couple years ago, and that is when President Obama was still in office and I was touting their nuclear modernization program as important, something that we should all get behind. It seems to me the Trump administration's modernization program is very similar to the Obama one. I certainly hope we can have a bi-

partisan support for that. It is an important issue that should transcend politics.

But I wanted to actually talk about another element of energy that you have been talking about. I actually read your interview in The Examiner this past week, a good picture there. So congratulations on that. But it is the issue of energy as a new instrument of American power, and whether it is renewables or natural gas or oil, we are on track, because of States like yours and States like mine, to become once again the world's energy super power, a position we had occupied for decades until a couple of decades ago.

Just given your experience, I think it is important to kind of get on the table as a former governor of Texas—I am a former Department of National Resources commissioner in Alaska—we clearly have the highest standards in the world—our country—in terms of producing and exploring energy than any other place, say, like Russia or Iran or Kazakhstan or Saudi Arabia, other places that produce energy. Do we not, Mr. Secretary?

Secretary PERRY. Yes, sir.

Senator SULLIVAN. So can you talk to us a little bit more about how you see energy as an instrument of American national security and economic security and jobs? A lot of my colleagues—I consider myself part of it—are looking at ways to push back against Russia. The New York Times recently reported that, "Russia is increasingly wielding oil as a geopolitical tool, spreading its influence around the world and challenging the interests of the United States."

Yet, Senator McCain and I had a meeting about a year and a half ago with a very senior Russian dissident, someone that is trying to undermine the Putin regime, which I think a lot of us want to do, push back on that regime. At the end of that meeting, he said the number one thing we can do—number one thing we can do—to help push back against Putin is produce more American energy.

So can you talk about that? It is this incredible opportunity we have. I think it should be bipartisan. You are clearly an expert on it with a lot of experience. I would love to hear your views on what we can do more and then what we should, as the Congress, do more to take advantage of this great American energy renaissance, American energy dominance, as you and Secretary Zinke and the President talk about it, but how it helps our national security, helps our allies. I would love to hear whatever you think we should be doing on this issue. You have been a leader on it and we appreciate it.

Secretary PERRY. Yes, sir. I will try to go fast. For a southern boy, I will talk as fast as I can.

Senator SULLIVAN. Well, I have about a minute and a half left. So go for it.

Secretary PERRY. We all remember 15 years ago there was a person traveling around the country giving a pretty good speech called peak oil. We found it all, and even if we were going to produce anymore, it was going to be incredibly expensive.

Senator SULLIVAN. We were going to be importing LNG [Liquified Natural Gas].

Secretary PERRY. Yes, sir. George Mitchell, with the help of national labs I might add—George Mitchell was an old geologist from

down in Texas, a Texas A&M graduate I might add, who along with our national labs on hydrologic fracturing and directional drilling changed the world literally. Today, the geopolitical geography, if you will, has truly changed and it has changed because America decided that it was going to produce and we had the technology to do it and the innovation to do it.

It is not just on the fossil fuel side. I mean, my home State of Texas produces more wind than any other state in the Nation. We did that in a decade period of time because we want to have a portfolio that was clearly diversified. I think when we talk about a bipartisan way to do this, I mean, whether it is wind, whether it is hydro, whether it is solar, whether it is LNG—I mean, we are sending LNG shipments to 27 countries now. I mean, the idea that American LNG was going to be anything—well, there was not an American LNG. We were going to import.

So it is the most fascinating time to be——

Senator SULLIVAN. How does that help our national security here on the——

Secretary PERRY. Certainly from the standpoint of—that dissident gave you good advice. Anytime that we can deliver LNG, for instance, whether it is sending it into Poland to that LNG facility up there, it sends the message to the rest of the European Union, you do not have to be held hostage by Russian gas.

Senator SULLIVAN. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Sullivan.

Senator Gillibrand?

Senator GILLIBRAND. Thank you, Mr. Chairman.

Thank you so much, Mr. Secretary, for joining us.

One of the primary responsibilities of the Department of Energy is to promote international nuclear safety and nonproliferation. However, President Trump recently waved sanctions on Iran under the JCPOA [Joint Coalition Plan of Action] but threatened not to do the same again unless Congress put forth legislation to rewrite the agreement to meet his list of demands.

Is the Department preparing to address any damage to international nuclear safety and worldwide nonproliferation efforts that would be caused by the United States reneging on a nonproliferation agreement that it helped to negotiate?

Secretary PERRY. Senator, I am going to support the President's position when it comes to JCPOA. I agree with him that, if we can get a better deal, we certainly ought to have that conversation.

My role in that and the Department of Energy's role in that is from a technical standpoint to give him the technical expertise as he goes forward on that. We are not in the policy business.

Senator GILLIBRAND. Yes, but as you know, the technical expertise is really important——

Secretary PERRY. Yes, ma'am.

Senator GILLIBRAND.—because when we negotiated the JCPOA, the Department of Energy was very heavily involved, and your predecessor was in the room for all negotiations. So I hope that you can focus on that technical support but recognize that if we do walk away from this agreement, I think it will undermine nuclear nonproliferation.

Do you have a plan to address any responses to us walking away from the agreement?

Secretary PERRY. Here is how I will address that. Our responsibility in the nonproliferation side of the equation is clear. We will use every means that we have, whether it is our ability to have detectors used, well, anywhere in the world for that matter, our scientists, the training of scientists in other countries. Our commitment to nonproliferation I think is as strong as it has ever been in this country. I intend to make it even stronger. So you have that commitment, Senator.

Senator GILLIBRAND. I have a related question. Earlier this week, the Commander of Strategic Command testified that the effect of weapons of mass destruction in the hands of transregional terrorist organizations could be catastrophic. Yet, at the same time, the 2018 NPR states that the current environment makes further progress towards nuclear arms reductions in the near term extremely challenging.

What is the Department of Energy doing to mitigate the possibility of nuclear materials ending up in the hands of terrorists?

Secretary PERRY. Senator, that may be a conversation that we need to have in a smaller room.

Senator GILLIBRAND. Okay.

Secretary PERRY. But know that we are committed to that.

Senator GILLIBRAND. Can I then ask for that briefing in closed session? If you prefer by letter, that is fine.

Secretary PERRY. Yes, ma'am.

Senator GILLIBRAND. Thank you.

One more issue. The safe and efficient cleanup of sites that are contaminated with legacy nuclear material is critically important to the communities that surround them. I appreciate your commitment to prioritizing your Department's responsibilities to clean up those sites.

However, I am concerned that the DOE's fiscal year 2019 budget request would decrease funding by 8.5 percent for the West Valley Demonstration Project. West Valley is a project authorized by Congress for decommission of a facility in western New York that was used to process high-level waste prior to 1980. It has been nearly 40 years since the facility closed down and the site remains highly toxic. A decrease in funding for this project will result in further delays while the site continues to pose a threat to health and safety of western New Yorkers.

I know that in our omnibus we are going to restore some of that funding, but will you commit to prioritizing the West Valley Demonstration Project within DOE's Office of Environmental Management to ensure that the cleanup does not fall behind schedule?

Secretary PERRY. Yes, ma'am.

Senator GILLIBRAND. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator.

Senator Heinrich?

Senator HEINRICH. Thank you, Chairman.

Welcome, Secretary Perry.

For the record, I want to associate myself with the comments of the ranking member with regard to maybe looking at doing this an-

nually. I think the Secretary of Energy's importance to DOD cannot be overstated.

Secretary, I would like to start with DOE's capacity to produce plutonium pits. When General Hyten testified here on Tuesday, he reinforced DOD's requirement of up to 80 pits per year by 2030 with the initial 30 per year by 2026 taking place with the existing facilities at Los Alamos. As I see it, General Hyten is really DOE's customer here.

Secretary PERRY. Yes, sir.

Senator HEINRICH. Are you fully committed to meeting STRATCOM's requirement for pit production of 30 by 2026 and 50 by 2030?

Secretary PERRY. Yes, sir.

Senator, if I could, I'll just add one thing. I think it was Senator Fischer that asked about the budgeting side of it and if we were going to have the resources in the omnibus in the 2019, and I said yes. But the caveat here that I think is important is that we are going to work with DOD and the OMB on any issues that may come out about that, any equivalency. So I just wanted to, for the record, make sure that she recognizes, you all recognize that the budget, as written, appears to be sufficient. If DOD has additional requirements, then we will address those.

Senator HEINRICH. We will certainly work on the budget side of things.

I asked that in part, Secretary, because spending 3 years on what I have viewed as a flawed analysis of alternatives [AOA] does not exactly inspire confidence with regard to the timeline. As you know, I had serious doubts about NNSA's analysis of alternatives to meet the 80 pits per year. In December, I sent you a letter expressing specific concerns with the AOA and that the modular approach at Los Alamos had not even been considered at that time.

The AOA has now taken a full 3 years. We were assured that Administrator Gordon-Hagerty intends to meet the May 11th deadline to make a decision on NNSA's recommended strategy for pit production. General Hyten testified Tuesday that he would be concerned if there is any further delay in that timeline. So as these delays stack up, it means there is simply no room for error at this point.

Can you assure me that the modular approach at Los Alamos will be fully considered in this process?

Secretary PERRY. I join General Hyten in telling you that that timeline is correct, and I will be greatly concerned if it is not met. Yes to your question.

Senator HEINRICH. Will you and the Deputy Secretary also commit to do a careful review of that recommendation by the May 11th deadline?

Secretary PERRY. Yes, sir.

Senator HEINRICH. Finally, can you assure me that the best available cost estimates are used and that the recommended option will meet STRATCOM's required capacity by 2030?

Secretary PERRY. Yes, sir.

Senator HEINRICH. I am going to shift gears a little bit right now, Secretary, and talk a little bit about trusted electronics. The Nuclear Posture Review confirmed the need to maintain a robust ca-

pability for both research and also a production capability of trusted radiation-hardened microelectronics.

The MESA facility at Sandia National Labs was built in the 1980s. It must be upgraded to meet future national security requirements after 2025. A plan is now being developed to upgrade MESA to meet NNSA's requirements through 2040.

Do you agree that NNSA should maintain the unique capability at Mesa for both the R&D [Research and Development] side but also the production capability of strategic radiation-hardened microelectronics?

Secretary PERRY. Yes, sir. I hope before the next 7 days are up to have visited that site.

Senator HEINRICH. Yes, I look forward to that. Thank you very much for making that a priority.

I was also really pleased to see an increase to $403 million in the request for WIPP to help restore full operations at that facility. I know you are familiar with that facility and I thank you for that. I had been concerned about the growing backlog in maintenance and repair at that facility, and so it is good to see an additional $47 million to look at those systems and structures, including a significant fire suppression system and an existing salt hoist there that are going to be very important to maintaining that in a safe way.

Secretary PERRY. Yes, sir.

Senator HEINRICH. I want to thank you for your focus and your commitment to funding WIPP in a way that ensures proper maintenance but also safe operation because we cannot afford to have a deviation from the safe operation of that facility.

Secretary PERRY. Indeed.

Senator HEINRICH. Thank you.

Secretary PERRY. Yes, sir.

Senator INHOFE. Thank you, Senator Heinrich.

Senator Kaine?

Senator KAINE. Thank you, Mr. Chair.

Thank you, Mr. Secretary. Good to be with you.

Secretary PERRY. Thank you.

Senator KAINE. I am really glad we are having this hearing, to the chair and ranking. One thing this hearing does is it kind of points out the somewhat arbitrary distinction that we often make between defense and non-defense spending as we are talking about budget caps.

This is an agency, the DOE, with a $30 billion budget and $25 billion of it is defense programs. Those programs are authorized in the NDAA but then appropriated through not the SAC-D [Senate Appropriations Committee-Defense] but through the domestic committee. Having this hearing is really important because it shows the way we talk about budget caps and things can be a little bit arbitrary. These expenditures are critical to the Nation's defense.

Mr. Secretary, I know that you know that in Virginia we care a lot about this. The Lynchburg area of Virginia—it is kind of odd how it developed, but is the center of production of nuclear reactors for the carriers and subs that are a critical part of the work we do. They are developed there in Lynchburg by amazing craftsmen and women and then on trains down to the shipyard where they are in-

stalled into carriers and subs. The deal we budget is absolutely critical to the Nation's defense.

I thank you for the work that you are doing to make sure, and I am happy with the omnibus that I hope that the Senate will vote in the next day or so because I think it portends well for the consistency of those investments.

I actually want to go, though, to a different space, which is you have a pretty amazing track record as a governor in a number of areas. Your tenure was pretty historic. But Texas and renewables. Texas produces more renewable energy than any State. Texas is in the top few in terms of the percentage of its energy that has been produced by renewables. If I got this right, I think Texas did a renewable portfolio standard in 1999 and then a new one in 2005, and yet whatever standard was set by the governor and legislature, Texas innovators and industry beat the standard. My sense, from everything I have studied, is that sort of a combination of policy and then private sector innovation has been not only an environmental good but also an economic good for Texas. Would you agree with that?

Secretary PERRY. I could not have written it any better, sir. That was an awesome display of what we were able to do in the State, and I totally agree with you.

Senator KAINE. How did Texas beat its standard? So you set CAFE [Corporate Average Fuel Economy]—I mean, not CAFE standards—renewable portfolio standards. Often we hear a debate about, oh, that is going to pit the environment against the economy. Yet Texas beat the standards again and again. How did that happen?

Secretary PERRY. I will try to be brief.

One of the ways we did it was by giving incentives to companies. For instance, we had a program called the Texas Emissions Reduction Program. We gave incentives on the franchise tax for fleet operators to remove old, inefficient burning engines and replace them. We subsidized—the State did—the building of a CREZ [Competitive Renewable Energy Zones] line from out where the wind blows to where the people are. There were incentives to get the private sector to do particular things.

The result of that and one of the things, Senator, that I am really proud of—Texas is a pretty good sized place, the 12th largest economy in the world. We created a lot of jobs while this was going on. The rural economic development from the wind energy was fascinating to watch happen. But we lowered emissions: NOx [Nitrous Oxide] by over 60 percent, SOx [Sulfer Oxide] by over 50 percent. The total carbon dioxide footprint in the State of Texas during that period of time was almost 20 percent in a State that grew by 7,000 people. That is a lot of pickup trucks on the road.

Senator KAINE. Right. So a growing population, growing economic activity——

Secretary PERRY. Lowering emissions. It was driven by two of those. The third one that really drove it was changing out, shifting out those old, inefficient power plants, replacing them with natural gas plants.

Senator KAINE. Well, I think Texas just offers such a bit of evidence for the country. We have had at least one vote during my

time in the Senate on a national renewable portfolio standard. I think Texas and the States that have done it have demonstrated that if we are bold enough to lead, we will actually be surprised and go farther than the standards that we set.

I remember a visit with Shimon Peres once where he said the same thing to me about the Middle East that was stated to you about Russia, Senator. He said, look, the best thing you could do for the Middle East is reduce your reliance upon oil, reduce your reliance upon foreign energy.

I think Texas gives us a path forward, and I wanted to praise you for your work there. I hope we would embrace that kind of a policy as a Nation.

Senator INHOFE. Thank you, Senator Kaine.

Senator Blumenthal?

Senator BLUMENTHAL. Thanks, Mr. Chairman.

Thank you for being here, Mr. Secretary.

As I know you are aware, DHS and the FBI [Federal Bureau of Investigation] highlighted a series of cyber attacks targeting United States Government entities and critical infrastructure sectors, occurring since at least March 2016, notably on the nuclear energy and water sectors. The New York Times reported last week that by 2013 researchers had linked Russian hackers to hundreds of attacks on United States and European energy grids. In my view, those attacks are an act of war. Would you agree?

Secretary PERRY. I would tend to agree with you, sir.

Senator BLUMENTHAL. Thank you.

By December of 2015, in fact a noticeable change of strategy occurred. The Russians had gone from intelligence gathering to actually possibly seeking to shut down these operations, a more serious act of war.

We know that Russia is willing to go much, much further. We know that fact from what they have done in the Ukraine in 2015 and 2016 when Russian Government hackers, in fact, executed cyber attacks against Ukraine's critical infrastructure that in fact vastly disrupted electrical grids and disabled control systems that impacted hundreds of thousands of people.

Can you assure us that the United States of America has taken dramatic action to deter such Russian attacks?

Secretary PERRY. I can.

Senator BLUMENTHAL. You can.

Secretary PERRY. I can.

Senator BLUMENTHAL. What kinds of actions have the United States taken?

Secretary PERRY. That conversation probably needs to occur in a smaller room, Senator.

Senator BLUMENTHAL. Well, I am asking what kinds of attacks. Are these verbal messages? Are they covert actions? Are they cyber messages of some kind?

Secretary PERRY. Senator, we are making, I think, every effort to protect the electrical grid from those types of attacks. Again, I am a bit—I am not a bit uncomfortable. I am quite comfortable telling you that we need to have this conversation in a room where we can talk classified.

Senator BLUMENTHAL. Is one of those actions to congratulate Vladimir Putin on his election? That kind of congratulations seems to, in effect, remove the deterrent effect of any action that we have taken.

Secretary PERRY. Senator, I think there are a lot of ways that we will be sending messages. My bet is that people call people from time to time that they are in great competition with and maybe tell them thank you on one sense, nice competitive work, but on the other side, rapping their kneecaps pretty hard to get their attention. In some other areas, you are making some big, big mistakes.

Senator BLUMENTHAL. Do you agree that Russia has to pay a price?

Secretary PERRY. I agree that the United States and the rest of the world need to send some very powerful messages to Russia relative to some of their activities.

Senator BLUMENTHAL. Do you agree that the only message the Vladimir Putin understands is one that makes him pay a price?

Secretary PERRY. That is exactly why the United States having an energy policy where that we can deliver energy to Eastern Europe, for instance, where we are a partner with people around the globe where they know that we will supply them energy and there are no strings attached is one of the most powerful messages that we can send to Russia.

Senator BLUMENTHAL. Do you agree that there has to be more cooperation between your Department and the utilities that are privately run and owned?

Secretary PERRY. Yes, sir.

Senator BLUMENTHAL. What steps are you taking to do that?

Secretary PERRY. We are working closely with that sector. With some specific companies, we are working even more closely with. There are some of these pieces of information that get into very sensitive areas. One of the conversations that we need to have, Senator Blumenthal, is being able to speed up the process of which we can get individuals classified so that if we need to bring them in and talk to them in a classified setting, we can do that. I know this is a little off subject here, but the point is I think it is really important for you and the committee to know that the process to get individuals classified so that they can do work is very slow and onerous. I think we need to have this conversation about how to speed that up and to be able to get these people into a classified designation.

Senator BLUMENTHAL. My time has expired.

But, Mr. Secretary, it is not off topic. It is a very relevant issue in this space and in protecting our election system, as was raised yesterday in the Department of Homeland Security or, I should say, the Intelligence Committee hearings involving the Department of Homeland Security.

But I would just emphasize to you that the Russians almost certainly know everything that you would tell me in a closed setting. They already know it. The ones who do not know it are the American people. They are the ones who deserve to know it. I would respectfully suggest that you and other leaders who are responsible in this area owe it to the American people to come in an open forum like this one and explain what we are doing to fight back

against the Russians who are attacking our country every day not only our Department of Defense but also our critical grid.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Blumenthal.

Senator Peters?

Senator PETERS. Thank you, Mr. Chairman.

Thank you, Secretary Perry, for your testimony here today.

Secretary Perry, as you know, your Department plays a key role in national security particularly in advancing nuclear nonproliferation and promoting nuclear safety generally across the globe. This includes working with the international community and the International Atomic Energy Agency.

One area that the IAEA [International Atomic Energy Agency] is involved in deals with the production and the reprocessing of plutonium. I would argue that the United States should take a leading role in pursuing strict enforcement of the IAEA agreement that requires participating countries to manage their production and their reprocessing of plutonium to maintain a balance between the supply created, as well as the demand for their peaceful purposes, the rightful peaceful purposes that they are conducting within their countries.

Currently, however, there are countries that are members of this agreement that are not in compliance with the best practices of balance between plutonium production supply and peaceful use demand. I would also argue the United States should encourage strict compliance with the principle of supply and demand balance of plutonium and then work to the next standard which we should employ which is to have a supply/demand balance for highly enriched uranium as well. This I think has the advantage of strengthening our global position in terms of nonproliferation norms before the JCPOA expires in the years ahead.

If the United States takes swift action and can show the global leadership to raise and not lower international nuclear standards so that the JCPOA provisions, when they expire, will find a very different diplomatic environment where the world community understands that we need to have this balance and we are taking strict action now, I think it will help us move to a place where Iran does not begin the commercial and large-scale reprocessing of—or, I should say, enrichment of uranium, which would be a global threat to us.

Secretary, my question is I would like you to share your views on this issue and whether or not it makes sense to try to push for a balance of supply and demand as is required in plutonium agreements and to move to highly enriched uranium as well.

Secretary PERRY. Yes, sir. I can answer that very briefly and directly. Yes, I believe that that should be our goal.

Senator PETERS. So what sort of diplomatic efforts will you be engaged in to promote that?

Secretary PERRY. My role is more on the technical side, Senator, than being a diplomat. That is the State Department. The State Department leads these types of efforts. So we have not a secondary role but I would say a supporting role on the technical side. I try to stay in my lane when it comes to—if the President asks

me to be a diplomat in a particular way, I will certainly take my instructions.

But let me go back and have a conversation with the folks in our office about the specificity of what you talked about, the balancing of that, and get back to you if I may.

Senator PETERS. Well, I would appreciate that, Mr. Secretary, because I think this is critically important. Certainly as a member of the cabinet with these responsibilities, your voice will be important. If it is something that you believe we need to pursue, I would certainly like to work with you to give a nudge to the administration to move in that area, particularly given the fact the JCPOA—every day we wait we get closer to its expiration, and we could see the production of enriched uranium.

I think that is also related to a question that was asked by Senator Reed as well, that in dealing with Saudi Arabia, that we really need to push to make sure that they also agree to the gold standard that the UAE agreed to. I think it would set a horrible precedent to allow Saudi Arabia to begin enriching uranium and perhaps to higher levels at the same time we may be getting close to the JCPOA expiring. I would certainly hope that you would push aggressively to make sure that Saudi Arabia is held to the same standard that we should hold every single country to really across the planet.

Secretary PERRY. Yes, sir. Count on it. As we are asked to engage in whatever way, we will. But I always remind people that the alternative is not good. If Russia, China, or who are going to be chosen to do the civil nuclear projects in the Kingdom of Saudi Arabia, there will be no oversight.

Senator PETERS. That is why we need to push to make sure we have this balance of supply and demand. Certainly both China and Russia need to be a part of that as well. This is going to take a very large diplomatic effort, which I believe the United States should lead. This is common sense, and if we can implement that with other nuclear powers, we will make a safer world.

Secretary PERRY. Indeed.

Senator PETERS. Thank you.

Secretary PERRY. Yes, sir.

Senator INHOFE. Thank you, Senator Peters.

Senator Cotton?

Senator COTTON. Thank you, Mr. Chairman.

Welcome back, Mr. Secretary. Always good to see you.

Senator Peters and I had a little vacation over the weekend. We went up—just a little, short flight up to the Arctic icecap where we got on a fast attack submarine and sailed underneath the ice and then surfaced about 24 hours later. It was a lot of fun. I would recommend to all of you that you do it. The quarters in the submarines are a little tight, though, I have to say.

But we had a chance to tour the nuclear reactor on the submarine. Naval Reactors is considered probably the gold standard within our nuclear enterprise, one of the best run organizations, maybe one of the best run organizations in the entire government. Now that you have been on board for a little over a year, you have had a chance to get to know your organization and observe Naval Reactors. I just wanted to know what your thoughts are about

what has made Naval Reactors such an outstanding organization for now 40-plus years, maybe what lessons could we learn from that and apply to some of the other more troubled parts of our nuclear enterprise or, for that part, across the government entirely.

Secretary PERRY. I will suggest to you it has had good leadership. Frank Caldwell is an incredibly capable leader. You look back to the man who started it, the extraordinary Admiral Zumwalt. So you have some really fine leadership. They have a tight focus. They basically stay in their lane. They have not gotten outside of that. They have a mission, and Naval Reactors has well run an operation, as I have had the opportunity to—and that is not to say that there are not some other places at the DOE and other areas of government that are not as capable. But I think your observation is very succinct that they indeed are well run.

Senator COTTON. I agree. It is really important for an organization to have leadership. There is no substitute for it. That is why we depend as a Congress on you and your people and the American people depend on all of you. As Secretary Gates used to say, when he was the Secretary of Defense, to his people, we can solve problems here with a scalpel or we can wait until Congress solves them with a meat cleaver. You have got some of the most important challenges that our government faces, not always pleasant business to think about these kind of things, but the American people are depending on you and the Department of Energy to make sure that our nuclear deterrent is safe, reliable, effective, credible.

I want to turn to one specific point now in your testimony, in which you state that you are building the capability and capacity to produce 80 pits per year by 2030. Is the main risk of missing that mark lack of adequate and certain funding for your organization?

Secretary PERRY. I think if the adequate funding was not in place, you would be correct. At this particular point in time in this budget cycle, it is adequate. In the out-years, I cannot respond to that because I do not know what those numbers are going to be. But for us to continue to build those pits to have those 30 pits per year ready by 2026, obviously the funding has to stay in line.

Senator COTTON. If the threats from Russia and China and Iran and North Korea, potentially other now or future nuclear states were to grow and our leaders determine that we need to produce more than that number of pits per year, with additional funding, do we have the technical ability to achieve that?

Secretary PERRY. Yes.

Senator COTTON. Good.

While we are talking about funding requirements as well, the Nuclear Posture Review, in addition to your testimony, observes that more than half of NNSA's infrastructure is over 40 years old. More than a quarter of it dates back to the Manhattan Project in the 1940s.

Your budget request had an increase of about $200 million for infrastructure and operations, much of that going to deferred maintenance for NNSA infrastructure. Secretary Perry, is the budget that we passed last month, the spending bill we may be on the verge of passing going to give you the money you need to make real progress on this infrastructure backlog?

Secretary PERRY. Yes.

Senator COTTON. Good.

Thank you very much for what you do, and thanks for all the men and women at the Department of Energy.

Secretary PERRY. Thank you, sir.

Senator INHOFE. Thank you, Senator Cotton.

Senator King?

Senator KING. Thank you, Mr. Chairman.

Mr. Secretary, Governor, welcome.

Secretary PERRY. Thank you, sir.

Senator KING. For 70-plus years, there has been no use of nuclear weapons since 1945 in the world, and that has principally been because of the strategy of deterrence, that there are nuclear-armed countries, but the deterrence strategy of, if you use them, you will suffer horrendous consequences has worked.

My concern is that the whole strategy of deterrence breaks down if you are talking about terrorists having nuclear weapons or a nuclear device. They have indicated they do not care about dying. They do not represent a nation state, and we really do not have a strategy to deal with that except nonproliferation.

What bothers me is that in your budget under NNSA, there is a significant increase for weapons activity. There is a significant increase for naval reactors. There is a decrease for nonproliferation. It is not a big decrease, but it is a decrease. It seems to me this is one of the most serious issues that we face in terms of the danger of nuclear weapons or even one nuclear device falling into the hands of either a small rogue state or more dangerously a terrorist organization.

Why in the world in this situation are we seeing a decrease in the activities of the Department in nonproliferation instead of an increase?

Secretary PERRY. Senator, I do not think you are seeing a decrease in the activities. You may be seeing a decrease in the funding line item, but the focus of the Department—and if my information is correct, we actually have an increase of the entire nonproliferation budget. I think it is approaching 4 percent.

Senator KING. Well, perhaps I am misinformed. I have got a Department of Energy budget request fact sheet, February 12th. It says 1.98 for defense nuclear nonproliferation, $17 million below fiscal year 2017 enacted. So maybe we need to get together offline and straighten out those numbers.

So you are committing to me a serious and unrelenting commitment to nonproliferation.

Secretary PERRY. Regardless of what that budget may be, sir.

Senator KING. Thank you.

NNSA has had some difficulty over the past years managing the life extension program, which is a very important part of the Nuclear Posture Review of recapitalizing. There have been cost overruns, schedule delays, reductions in numbers of weapons refurbishment. What are you doing to get a hold of that program and tighten the management so that we can meet the deadlines and also the cost limitations?

Secretary PERRY. I am sorry. Repeat that again, Senator.

Senator KING. On the life extension programs for nuclear weapons, there have been cost overruns, delays. The question is can we rely on the Department to focus management skills on this problem because this is going to be a part of the Nuclear Posture Review's recapitalization.

Secretary PERRY. Excuse me for making you repeat that, Senator.

What I found a year ago when I came into the agency, there are a number of programs that had some pretty big cost overruns. There were some pretty big programs, whether it was in the environmental management side of things or whether it was in the programmatic side of life extension programs.

We have a new NNSA Administrator. She and I have had very pointed conversations about the management of the modernization of the arsenal, the life extension programs. I will suggest to you and I hope that you will see a commitment to managing those programs where that the result is not only up to your satisfaction, but the expenditures are within the realm of thoughtful, efficient use of our taxpayer dollars.

Senator KING. Thank you.

In just a few seconds, just a comment. You mentioned it earlier. The issue of clearances is a huge problem throughout the government. We had a hearing in the Intelligence Committee a couple of weeks ago just on this subject. It turns out there is a backlog of 791,000 people awaiting secret or top secret clearances, which is impeding our ability across the government, but I know it is in your Department. We discovered in that hearing that OMB seems to be the center of where this is focused, and I hope that you will work with OMB and add your voice to those of other departments that we have just got to solve this problem. Not only is it slowing down the activities, but we are losing good people. I know people who have been in the queue for a year and a half or 2 years, and finally they said I am going to go off and get a job in the private sector. I cannot wait for this anymore. I think that is a real loss. That is an opportunity lost to our country.

Secretary PERRY. I will not sit here in front of you and defend OMB, sir.

Senator KING. I want you to raise this with them and be insistent as only you can be.

Secretary PERRY. Yes, sir.

Senator KING. Thank you, Mr. Secretary.

Senator INHOFE. Thank you, Senator King.

Senator Cruz?

Senator CRUZ. Thank you, Mr. Chairman.

Good morning, Mr. Secretary.

Secretary PERRY. Senator.

Senator CRUZ. Welcome. Let me say first of all congrats on the Aggies beating North Carolina. I know you were celebrating loudly, and we all were. That was a good victory and I hope more to come.

Secretary PERRY. On to Michigan.

Senator CRUZ. It should have been Houston. That would have made an even better game. But alas, it was not to be.

Mr. Secretary, often when people talk about the work of the Department of Energy, they think about physicists in laboratories and

models being developed on supercomputers. But an important part of it is that we also have to be able to build and produce the things our scientists design, and for that we need production capacity like at the Pantex plant outside of Amarillo, Texas. We used to have huge production capacity in this country, but we have closed much of that down at the end of the Cold War. Now we have a few places left and a lot of the buildings in those places are too old and too small to do what we need to have them do.

The Nuclear Posture Review the Department of Defense recently released mentions, "developing a National Nuclear Security Administration road map that sizes production capacity to modernization and hedging requirements." Could you elaborate a little bit on what that means and what kind of production capacity we need that we do not have right now?

Secretary PERRY. Senator, I think the issue that you rightly focused in on—it is as much as, in a global sense, looking back over the last 25 years after the end of the Cold War, if you will, the peace dividend that we all appreciated. Then the world has changed since then. The requirement, whether it was in facilities, whether it was in modernization of our weapons, whether it was in keeping a supply chain in place, is a slight diversion here. It is the same challenge that we have got on our civil nuclear side, is that those got pushed back on the back burner.

We are faced now with, on the civil nuclear side, a real challenge, whether it is keeping our companies engaged in this in a worldwide way, developing the engineers and the technology and the expertise to go forward with. The same is true in the sense of our weapons program. You have visited Pantex before. You have visited Senator Graham's facilities out at Savannah River. Oak Ridge has some facilities that are older than I am. For a building that is old.

But my point is that this Nuclear Posture Review and this committee needs to be, as I said in my opening remarks, thanked for recognizing that we have got to have the resources to be able to get this country back on track from the standpoint of building the life extension programs, the modernization of the fleet. If we do not, then we put America in a place of jeopardy that I do not think anyone on this committee wants to see us in.

Senator CRUZ. Is the Department looking at expanding facilities in existing plants like Pantex?

Secretary PERRY. I do not know whether we are looking at expanding facilities. One of the things that is very close to being is a new headquarters building at Pantex that is going to get them out of some early 1950s buildings that are scattered around and all over that complex into one facility where I can assure you that your constituents that are getting up in Randall County every day and going to work are really going to like going to work there because it is a first class facility, but it is long overdue. So the facility side of this is a real challenge, and we should not be asking some of the people who are involved in some of the most important work in this country keeping us safe and deterring those that would do us harm from having to go to work in buildings that, quite frankly, are an embarrassment in some cases.

Senator CRUZ. Thank you, Mr. Secretary.

Senator INHOFE. Thank you, Senator Cruz.

Senator Warren?

Senator WARREN. Thank you, Mr. Chairman.

Thank you, Secretary Perry, for being here today.

Secretary Mattis told this committee that, "the central challenge to United States prosperity and security is the reemergence of long-term strategic competition with countries like Russia and China." More specifically, he said that China, quote, continues its economic and military ascendance asserting power through an all-of-nation long-term strategy. He called on the U.S. to pursue a similar whole-of-government response.

Let me just ask. I will start with just a yes or no question here, Secretary Perry. Do you agree with Secretary Mattis on this?

Secretary PERRY. Yes, ma'am. I might expand on that.

Senator WARREN. But basic agreement. Good. Because I want to ask you how this plays out in your area of responsibility.

According to the International Energy Agency, renewables accounted for almost two-thirds of new net power capacity around the world in 2016. Last year, according to Bloomberg, China accounted for 40 percent of all global clean energy investments. China has vowed to spend at least $360 billion on renewable energy by 2020. But here at home, President Trump's latest budget would cut the Energy Department's research office on renewable energy and efficiency by 65 percent.

Very briefly, can you explain to me, Secretary Perry, how cuts to funding for research into energy efficiency and renewable energy improve America's future energy security?

Secretary PERRY. Senator, I will talk about two different arenas here. One is that we are different from China, and we are different from China in the sense that our private sector is where a substantial amount of R&D is done. We have a role in early stage development, which we have, I think, done a very good job of. Once those technologies become more mature and we can commercialize them, then the private sector will take over.

Senator WARREN. But why do we cut that by 65 percent, Mr. Secretary? That is what that is.

Secretary PERRY. But the point there is that these are technologies that are starting to mature.

Senator WARREN. I am sorry, Mr. Secretary, but that is the whole point is that we keep doing the early stage research so the next technology is supported and the next one and the next one. What I do not understand is how you can cut research into energy by 65 percent and how that is going to help us be a global competitor.

You know, the Trump administration is rolling back rules designed to limit dependence on dirty fossil fuels, and our competitors at the same time, competitors like China, are making huge investments in solar power and other renewable energy sources. This is a $1 trillion market, and we are cutting ourselves out of it. Instead of leading the energy revolution, the Trump administration's policies are causing the United States to be left behind.

Secretary PERRY. Senator, as I look at our budget, the Office of Technology Transfer had a 23 percent increase in our budget. So I do not think we are arguing apples and oranges here.

Senator WARREN. Are you telling me the Trump administration budget did not propose a 65 percent cut?

Secretary PERRY. No. What I am telling you is that just because a line item does not have the same amount of money in it that it did in 2017 does not mean that the focus is not there.

Senator WARREN. Look, I got to say if you do not spend the money, you cannot support the research.

I want to ask you about the nuclear deal between the United States, the five partner nations, and Iran and the restrictions this has placed on Iran's nuclear program under limits and inspections so it cannot develop nuclear weapons. I just want to start with a couple of baseline technical questions.

As a result of the nuclear deal, has Iran eliminated 97 percent of its low-enriched uranium stockpile?

Secretary PERRY. I think that is correct.

Senator WARREN. Yes. Has Iran removed the core of the Arak heavy water reactor and filled it with concrete so that it will not produce significant amounts of weapons-grade plutonium?

Secretary PERRY. That is correct.

Senator WARREN. Do international weapons inspectors have more access to and more monitoring of Iran's nuclear sites, their uranium mines, and their mills and centrifuge production facilities?

Secretary PERRY. I would say you are correct. There may be some other places that those inspectors would like to take a look at.

Senator WARREN. Right. I know that under the additional protocol, they are allowed to do that. But do you basically agree that that is what they have got now?

Secretary PERRY. With my caveat to that.

Senator WARREN. I know there are other technical aspects to the agreement, but one last question. I know I am out of time here. I am going to ask the indulgence of the chair. We will try to be short.

In his most recent threat assessment, the Director of National Intelligence said the Iran nuclear agreement has, "extended the amount of time Iran would need to produce enough fissile material for a nuclear weapon from a few months to about 1 year" and, "has enhanced the transparency of Iran's nuclear activities."

Secretary Perry, do you agree with the intelligence community's assessment on that?

Secretary PERRY. I cannot tell that I do or I do not.

Senator WARREN. Okay. I am a little surprised by that. They are the intelligence community that has brought us this information.

I will just say I understand that Iran supports terrorism, abuses human rights, develops nuclear missiles, in short, is a bad actor. But an Iran without nuclear weapons is at least a lot easier to deal with than an Iran with nuclear weapons. I think that is something we have to keep in mind as we talk about our agreement to keep Iran from having those nuclear weapons.

Thank you.

Senator INHOFE. Thank you, Senator Warren.

Senator Graham?

Senator GRAHAM. Thank you.

Mr. Secretary, I think you are doing a great job for the President, and I really appreciate your service to our country.

Secretary PERRY. Thank you, Senator.

Senator GRAHAM. Just to pick up on the Iran deal, I was not going to talk about it, but I will now. Did the Iranians deny inspectors access to military sites in Iran?

Secretary PERRY. It is my understanding that they did.

Senator GRAHAM. Under the agreement, in 15 years from now, can the Iranians enrich and reprocess without limitation?

Secretary PERRY. Yes, sir.

Senator GRAHAM. Do you think that is a good deal?

Secretary PERRY. No, sir.

Senator GRAHAM. Thanks for coming to SRS [Savannah River Site]. It was a great visit. I know we have some differences on MOX, but you identified some things that we could work on at the site that are very exciting to us and the community.

The President tweeted out a couple of days ago he wants to talk with Putin about stopping an arms race. Do you think that is a good idea?

Secretary PERRY. I think stopping an arms race would be a good idea.

Senator GRAHAM. I do too. Actually I think it is okay to talk to the Russians about where we are going with nuclear weapons.

This nuclear-powered cruise missile that they displayed on a video in Russia—what did you take that to mean? What are they trying to tell us?

Secretary PERRY. They are back in the game and we better pay attention to them.

Senator GRAHAM. I could not say it any better.

Your effort is to get us back in the game by rebuilding our triad system that has been depleted over time.

Secretary PERRY. Correct.

Senator GRAHAM. That is to modernize our nuclear force. I hope to God we never use it, but make sure it is a deterrent. That is correct.

Secretary PERRY. That is correct.

Senator GRAHAM. The money you think is well spent?

Secretary PERRY. I do.

Senator GRAHAM. I do too.

Secretary PERRY. I hope it is even more efficiently spent under the current administration.

Senator GRAHAM. I think we have to do two things at once: talk to the Russians about where we are headed but rebuild a nuclear deterrent force that is in decline. That is on your watch and I have a lot of confidence that you will get that done.

As to the MOX issue, 34 metric tons of weapons-grade plutonium was agreed to be disposed of by both sides in early 2000. You are aware of that agreement?

Secretary PERRY. Yes, sir.

Senator GRAHAM. The Russians had 34 metric tons of weapons-grade plutonium in excess of their defense needs. We had the same amount. If you took 34 metric tons of weapons-grade plutonium, do you realize you can make over 10,000 warheads out of that material?

Secretary PERRY. Yes, sir.

Senator GRAHAM. So the goal is to take that off the table, turn it into a plowshare, no longer a sword.

In 2010, are you aware of the fact that we signed an agreement with Russia where the MOX system would be our disposal method and they would burn their plutonium in a fast reactor?

Secretary PERRY. Yes, sir, I am.

Senator GRAHAM. The Obama administration decided to abandoned construction of the MOX program. Do you consider that a withdrawal of that agreement?

Secretary PERRY. No, sir. I consider the Russians are who walked away from the agreement.

Senator GRAHAM. What did they do to walk away?

Secretary PERRY. They unilaterally suspended the PMDA [Plutonium Management and Disposition Agreement]. Prior to that suspension, the Department had informed Russia both formally and informally that we would pursue the D&D [Dilute and Dispose] process.

Senator GRAHAM. Dilute and disposal.

Secretary PERRY. Dilute and disposal, yes, sir.

Senator GRAHAM. So your belief is the Russians walked away not us.

Secretary PERRY. Yes, sir.

Senator GRAHAM. Why did we go from MOX to dilute and dispose? Is that the new policy of the administration?

Secretary PERRY. Yes, sir. I will try to give you the short version of this. You and I have talked about it at length, but for the purposes of the committee, we think that the cost versus the cost of D&D, the timetable to being able to address the plutonium issue in the MOX versus——

Senator GRAHAM. You realize that I have a different view of all of this.

Secretary PERRY. Yes, sir, I do.

Senator GRAHAM. So let us look at the dilute and dispose option. It would go to New Mexico to the WIPP system—is that right—after it is diluted?

Secretary PERRY. Yes, sir.

Senator GRAHAM. Have you talked to the New Mexico delegation?

Secretary PERRY. I have talked to the delegation. I have talked to the Governor.

Senator GRAHAM. What did they say?

Secretary PERRY. They are in the process of having a conversation, a negotiation with their environmental commission.

Senator GRAHAM. Have they agreed to accept the material?

Secretary PERRY. We will know the answer to that in May.

Senator GRAHAM. Do you not think we should know the answer to that before we stop the other program?

Secretary PERRY. I am comfortable that we are already sending plutonium——

Senator GRAHAM. Let me ask you another question.

Secretary PERRY.—to the WIPP as we speak, 5 metric tons.

Senator GRAHAM. What regulations would be required to be changed to do dilute and dispose? Have you inventoried what regulations would be required to be changed?

Secretary PERRY. Can I get back to you on that?

Senator GRAHAM. Sure.

[The information follows:]

Secretary PERRY. The Department of Energy (DOE) has reviewed existing regulations and determined that no regulations would be required to change for dilute and dispose. DOE is working with the State of New Mexico to address Waste Isolation Pilot Plant capacity issues, regardless of any decisions on the 34 metric tons of surplus plutonium. The current tracking method, which uses outer container volume, counts a significant amount of air between the inner and outer containers as waste. A proposed permit modification, which does not require changes to current law, identifying a more accurate tracking of actual waste volumes was submitted to the New Mexico Environment Department on January 31, 2018. The public comment period on this Class 3 modification ended September 20, 2018. We'll continue to work with the State on the process moving forward.

Senator GRAHAM. What legislation would be required to be changed?

Secretary PERRY. Same response.

Senator GRAHAM. Okay.

Have the Russians agreed to dilute and dispose?

Secretary PERRY. No. The Russians basically said that their waiver would require——

Senator GRAHAM. They object to it.

Secretary PERRY. Yes, in some pretty harsh ways basically saying that we got to—anyway.

Senator GRAHAM. Thank you.

I think what we have done is ended the biggest nonproliferation program in the history of the world for no good reason, and I am going to try to fix that.

Thank you.

Senator INHOFE. Thank you, Senator Graham.

Senator Nelson?

Senator NELSON. Thank you, Mr. Chairman.

Mr. Secretary, it is good to see you.

Secretary PERRY. Thank you.

Senator NELSON. You are looking very well.

I want to pick up on this discussion about nuclear proliferation. Do you think that Iran—do you have any reason to believe that Iran by denying access to some of these military facilities is cheating on the JCPOA?

Secretary PERRY. Senator, if history is a teacher, then the Iranians do not have a real good track record of living up to agreements or telling the truth.

Senator NELSON. What do you recommend that we do?

Secretary PERRY. I think anytime that you can renegotiate an agreement that puts you in a better position, you should do it, whether it is the North American Free Trade Agreement or whether it is the Joint Comprehensive Plan of Action. I think this President properly and for the right reasons is renegotiating some agreements that from his perspective is not in America's best interest.

Senator NELSON. The agreement basically keeps Iran from having a nuclear weapon for a specified number of years. Is there anything that you know of that would indicate that that is not going to be fulfilled?

Secretary PERRY. I think the President's focus here is on being able to push that timeline even further down the road. I think everyone around your dais agrees that that is a good idea. The idea that we could push Iran back from the standpoint of when they can start processing is a good thing.

Senator NELSON. Beyond the 15 years.

Secretary PERRY. Yes, sir.

Senator NELSON. Let me ask you about our concern that Saudi Arabia might be wanting to get into the nuclear bomb business. So they are wanting to have a whole bunch of nuclear reactors for electricity production. We worked with the IAEA to produce these protocols called additional protocols to monitor for diversions from technology used for electricity to get it over. Do you think Saudi Arabia should adhere to those protocols?

Secretary PERRY. Yes, sir.

Senator NELSON. So do I.

Mr. Secretary, back to an earlier discussion that you had with Senator Blumenthal. It is troubling—and I am saying this from my standpoint. I have the privilege of, along with Senator Rounds, leading the Cyber Subcommittee of the full committee here. We are quite concerned with what Russia is able to do to us, in addition to a whole bunch of other countries and parties, in cyber attacks.

If an electric company—and I am making this point—in the private sector, an electric company, a banking company, a water company, whatever in the private sector—if they were attacked with, say, a bomb, a sabotage, a missile from Russia, that would be a direct attack on our country. Would it not be the same thing if they use cyber to attack and shut down, say, an electrical grid?

Secretary PERRY. Senator Nelson, I think you are absolutely correct. I think the world has changed greatly over the course of the last decade when it comes to using a digital way to attack a country and that we have to have this conversation. We have to be not only on the cybersecurity side of this but also on the rules of engagement standpoint, that when there is massive amounts of damage done—for instance, if a hospital were to be shut down and their ability to deliver lifesaving procedures because of an attack on their information technology system, that is every bit as much a direct effect on people's lives as if someone would explode a bomb in an emergency room.

Senator NELSON. Well, I think I can speak for Senator Rounds. So you know this is in a bipartisan spirit. We are concerned that the DOD, which is our only capability now as the commander—we are concerned—and he is also, the head of NSA [National Security Agency]. We are concerned if he has the authorities in order to, number one, prevent or, number two, counterattack in the case of such a thing. I want to bring this to you since you are definitely a part of the national security apparatus to please give counsel to this because it is upon us, and it is going to happen one way or another. We have already seen how an attack undermines our very democratic institutions.

Secretary PERRY. Yes, sir.

Senator NELSON. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Nelson.

Senator Scott?

Senator SCOTT. Thank you, Mr. Chairman.

Good morning, Secretary.

Secretary PERRY. Senator.

Senator SCOTT. Good to see you again.

Secretary PERRY. Good to be in your presence, sir.

Senator SCOTT. Thank you, sir.

Thank you for visiting the MOX facility and the entire Savannah River site.

Can we just revisit why the Russians withdrew from the PMDA because from my perspective nonproliferation equals the PMDA in many, many ways? It has been widely reported that the Russians withdrew from the PMDA because of our lack of progress on the MOX facility. Would you agree or disagree?

Secretary PERRY. Yes, sir. They are the ones that walked away.

Senator SCOTT. But would you agree that part of the reason why they walked away, at least the focus that I have read—part of their rationale for walking away—is that we were not upholding our part of disposing of and eliminating the weapons-grade component of the material?

Secretary PERRY. Senator Scott, without having any more information, I might agree with that simplistic approach. But here is what I think from my perspective, and I am not going to base this on anything other than some facts.

The Russians suspended it because I think they were looking for a reason to suspend it. That is my read on this. I think when they put the requirements for the resumption out on the table, then that even solidified it more for me. When they talk about they require the reduction of military infrastructure and manpower in certain NATO [North Atlantic Treaty Organization] countries before they will come back to the table, when they say they want a repeal of the Magnitsky Act and the Ukraine Freedom Support Act, so I start seeing a real political pushback from the Russians. You and I—we have done a few negotiations before. I think they were looking for a reason to walk away from this so that they could make some political points.

Senator SCOTT. Let me suggest that what you are talking about is a part of the aftermath. The fact of the matter, that which opened the door for them to walk away was us not honoring the obligation and our responsibility to develop the technology that eliminates the weapons-grade component. So the reality of it is that we opened the door. Actually we did not open the door. We took the door off the hinges and said please feel free to walk away with your part of the 34 metric tons of weapons-grade plutonium that at least creates 10,000 warheads, perhaps 15,000 warheads. So the reality of it is we opened a door and we still focus on the importance of nonproliferation. We opened the door with a bad actor from my perspective.

A question for you. What if New Mexico says no? What if the capacity levels that seem to be in question already becomes an answered question that there is no capacity? What if the incidents that have occurred at the New Mexico site become more problematic or we find more reasons and rationale why it will not work?

What if the Russians actually say that the D&D does not eliminate the weapons-grade component and we find ourselves back at the table and back in South Carolina at a site that according to some—I am sure that you guys would disagree—is between 60 and 65 percent complete? We have invested billions of dollars. What if the United States Congress is unwilling to change the laws and the administration cannot find ways to change regulations in order for

us to move forward on some alternative other than the current alternative that is about 65 percent finished and is the only means we have in the United States to eliminate the weapons-grade component?

Secretary PERRY. Senator, I do not get to work on "what ifs." I have to work on concrete evidence. This committee has put forward a directive from my perspective that MOX is shut down, and MOX is shut down because it is horrendously over budget. The timetable for it that we are looking at now is 2048 before the first plutonium could be processed versus dilute and dispose, which is substantially less so. In the NDAA, we were clearly given instructions that I think this committee may have passed twice and sent out that says here are the four parameters of which you need to meet. We will have the answers to those in the very near future. But what I am looking at is my own GAO-supported numbers and this committee's instruction that we look at this alternative. And so I know we have had disagreement about whose numbers are right.

Senator SCOTT. Yes.

Secretary PERRY. But this committee has sent a really powerful message to me that this is what we want you to do.

Senator Graham and you and I both talked about at length some legacy programs that can go into Savannah River, and there are. We want to work with you all, with the governor, with the people out there to find those opportunities.

Senator SCOTT. We welcome that.

I know I am over time, but Mr. Chairman, I will close with this to our Secretary, whom I have a great respect for and admiration.

Secretary PERRY. Thank you.

Senator SCOTT. We disagree fundamentally on this issue. I will say, however, that looking for concrete evidence—let me lay out the concrete evidence from my perspective. What is concrete is that we simply do not know the cost of transferring to WIPP. That is concrete. Number two, what is concrete is we do not understand the timeline. Concrete is we do not understand the process for getting the regulatory environment or Congress to approve. Concrete, we do not have any confirmation that the New Mexico delegation will move forward.

What we do have concrete is billions of dollars of concrete in the ground in South Carolina. What we do have concrete is that the only known way for us to dispose and eliminate the weapons-grade component is the MOX facility, and we have very, very strong disagreements on the price, the time of completion.

I think the chairman is telling me to stop. Thank you, sir.

Secretary PERRY. Senator Scott, thank you. The only thing that I would say in response very quickly is the dilute and dispose technology has been proven, and the reason it has been proven is that we have put 5 metric tons of plutonium into the ground at WIPP.

Senator SCOTT. Mr. Chairman, thank you so much for allowing us to go forward.

Senator INHOFE. Thank you very much, Mr. Scott.

Senator Donnelly?

Senator DONNELLY. Thank you, Mr. Chairman.

Mr. Secretary, I appreciate your highlighting the importance of a trusted supply of strategic radiation-hardened advanced micro-

electronics, including R&D capabilities, in your testimony. NNSA is our nation's source for these critical supplies for our nuclear weapons. But the challenges related to the production of trusted microelectronics and circuit boards exist with all of our weapon systems, not just nuclear. The declining U.S. industrial base and the proliferation of threats in our supply chain is creating new and dangerous ways for adversaries to attack our systems.

How are you coordinating with DOD to ensure we are investing properly and not duplicating efforts or leaving gaps in critical areas?

Secretary PERRY. Senator, I know you have probably had the opportunity to meet the new Administrator at NNSA, a very capable, bright, and hard charger. I have every confidence in the world not only does her history of where she came from, national security, but also her—I mean, I would not have asked her to come and serve in that role if I was not very confident that she is going to be able to stand in there and deliver to you exactly what you want.

Senator DONNELLY. I just want to emphasize to you that this is not only an important issue to me but to national security.

Secretary PERRY. Absolutely.

Senator DONNELLY. Thank you.

As ranking member of the Strategic Forces Subcommittee, I am a strong supporter of modernizing all three legs of the nuclear triad. I am pleased to see we agree on that. The work of the NNSA is integral to our nuclear modernization. We held a hearing just last week in our Strategic Forces Subcommittee with Administrator Gordon-Hagerty, with Admiral Caldwell, Mr. Owendoff, and Mr. Trimble from the GAO. I want to get your thoughts on some of the issues raised there.

We have a new bomber, a new air-launched cruise missile, the life extension of current ICBMs, a new ICBM, a new SSBN [Submersible Ship Ballist Missile Nuclear Powered]. Now the Nuclear Posture Review adds to this potentially another warhead modification, a new sea-launched cruise missile, any necessary modifications to the vessels carrying that cruise missile, and any warhead modifications necessary to arm it.

Do you have a budget proposal for that warhead, and how much will it cost for fiscal year 2019 and over the 5-year defense plan?

Secretary PERRY. This is not a new capability. This a weapon that we have had in the fleet before that we are bringing back up. Let me, with your permission, get back to you on the exact budgetary requirements for that.

[The information follows:]

Secretary PERRY. There is no funding in the fiscal year 2019 request or associated Future Years Nuclear Security Program for the Sea-Launched Cruise Missile initiative. As the Department of Defense continues the work of translating the policy of the Nuclear Posture Review, through the Nuclear Weapons Council, into requirements for the nuclear security enterprise, the Department of Energy's National Nuclear Security Administration will support as needed. The process building the fiscal year 2020 request will consider any new requirements, as they are identified.

Senator DONNELLY. Okay.

The last thing I want to ask. I think it is important to ensure we are investing in our national labs. I think they are extraordinarily critical and investing in their workforce while also providing oversight of management and operation contractors. It will

take a joint effort to build and sustain our nuclear security enterprise into the future.

Can you tell me how you think about this challenge and the importance of the labs? I heard you mention early on today that you said they are a jewel. They really are.

Secretary PERRY. They really are, yes, sir. If it is the one thing that I have been the most impressed with with my time as the Secretary, it has been to be able to go visit with these labs, have the lab directors in fairly regular, and share with the rest of the country through a lot of different means, including social media, just how good these labs are. It is one of the reasons that this lab-directed research and development program is so important. It is one of the reasons that we think that the ability for our national labs to have some autonomy, if you will, when it comes to being able to let the labs direct some of this funding to where it needs to go. So I am sure there are some really big cheerleaders for the national labs, but I am going to put myself right up there with the best of us.

Senator DONNELLY. Thank you for your hard work.

Secretary PERRY. Thank you, sir.

Senator INHOFE. Thank you, Senator Donnelly.

I am going to go ahead and adjourn the meeting here because we are out of time.

[Whereupon, at 11:59 a.m., the committee was adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR BEN SASSE

CYBERSECURITY AND THE ENERGY GRID

1. Senator SASSE. The Department of Energy is the lead agency for combating cyber threats to the electric grid and our energy infrastructure. Since at least March 2016, Russian hackers have tried to infiltrate sectors of American infrastructure, including energy, nuclear, commercial facilities, water, aviation and manufacturing, according to a Department of Homeland Security report published this month. In 2015 and 2016, Russian cyber attacks brought down parts of Ukraine's electrical grid. Clearly Russia has both the capability and will to harm an opponent's energy grid. This makes them a cyber threat. What is the Department of Energy doing to protect itself and the energy grid from cyber attacks?

Secretary PERRY. Cybersecurity of the energy sector is a top priority for the Department of Energy (DOE), which established the Office of Cybersecurity, Energy Security, and Emergency Response (CESER) in May 2018 to focus on early-stage activities that improve cybersecurity and resilience to harden and evolve critical grid infrastructure. CESER programs will work in an integrated manner in partnership with industry and other stakeholders, as well as other DOE offices, to enhance the resilience (the ability to withstand and quickly recover from disruptions and maintain critical function) and security (the ability to protect system assets and critical functions from unauthorized and undesirable actors) of the U.S. energy infrastructure.

DOE, the Sector-Specific Agency (SSA) for the energy sector, is working closely with the critical infrastructure security lead, the Department of Homeland Security, as well as stakeholders across industry, law enforcement, the intelligence community, and state governments, to ensure resilience is factored into ongoing grid modernization efforts. DOE works with its energy sector partners, through forums such as the Electricity Subsector Coordinating Council (ESCC) and Oil and Natural Gas Subsector Coordinating Council (ONG SCC), to prioritize efforts to strengthen cybersecurity preparedness in the energy sector, improve capabilities to coordinate cyber incident response and recovery and accelerate innovative research and development of resilient energy delivery systems.

DOE advances industry-wide cybersecurity risk management and practice by disseminating information through classified threat briefings and security workshops and providing access to tools and technical resources that are used to improve deci-

sion making and inform investments by our sector partners. One of these resources, DOE's Cybersecurity Capability Maturity Model (C2M2), helps organizations evaluate their current cybersecurity capabilities and prioritize and improve future activities to improve them, and has been used by over 1,200 energy sector organizations.

DOE has also worked with Idaho National Laboratory and the Electricity Information Sharing and Analysis Center (E–ISAC) to host the Energy Sector Security Workshop series, which provides energy-sector owners and operators with a hands-on, simulated demonstration of a cyberattack. The lessons learned from these workshops help to better inform future security and resiliency investments by furthering attendees' understanding of the range of methods and tools, as well as common targets, associated with a cyberattack. These engagements are further complemented by DOE's partnerships with the E–ISAC, Oil and Natural Gas Information Sharing and Analysis Center (ONG–ISAC), and Downstream Natural Gas Information Sharing and Analysis Center (DNG–ISAC). DOE works with the energy sector ISACs to regularly share threat information and trends with a broad range of industry stakeholders to help them better protect their current networks and inform future security decisions.

In addition to cybersecurity preparedness and information sharing initiatives, maintaining a robust pipeline of cutting-edge technologies is essential to helping the energy sector continue adapting to the changing cyber landscape. As the technology landscape in the energy sector continues to advance, including the growing use of digital communications and control systems to improve reliability, so do the capabilities of the threat. DOE has been working with the energy sector for more than a decade to get ahead of this continual evolution through investments in advanced R&D to develop resilient systems that can survive a cyber event without loss of critical functions. More than 40 tools and technologies resulting from the Office of Electricity Delivery and Energy Reliability's cybersecurity research, development and demonstration (RD&D) projects have transitioned to the energy sector and are in use today. Nearly 1,000 utilities in all 50 states have purchased technologies developed under our Cybersecurity for Energy Delivery Systems research program.

DOE's current RD&D portfolio of more than 60 projects builds on new concepts from past R&D to develop groundbreaking cybersecurity solutions. Several of these projects are led by DOE national laboratories, including the Argonne, Brookhaven, Idaho, Lawrence Berkeley, Lawrence Livermore, Los Alamos, National Renewable Energy, Oak Ridge, Pacific Northwest, and Sandia National Laboratories. Researchers are developing tools and technologies that can be transitioned to the energy sector to prevent, detect, and mitigate cyber-attacks intended to disrupt the computers and networks that manage, monitor, protect, and control energy delivery, the power grid, and oil and natural gas.

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

NUCLEAR POWER ASSISTANCE TO SAUDI ARABIA

2. Senator SHAHEEN. Secretary Perry, the government of Saudi Arabia has indicated it plans to build nuclear power plants in Saudi Arabia. As the Trump administration considers whether the United States Government should provide assistance to Saudi Arabia in its pursuit of nuclear energy, how would the Department of Energy (DOE) balance fulfilling the nuclear nonproliferation mission of the National Nuclear Safety Administration (NNSA) on one hand, against preventing Russia and China from offering Saudi Arabia a "no strings attached" type of alternative?

Secretary PERRY. The United States has discussed for several years potential terms for a peaceful nuclear cooperation agreement (123 Agreement) with Saudi Arabia, which last year announced its intention to build at least two large nuclear power plants. DOE provides technical support to the State Department, which is charged with negotiating nuclear cooperation commitments from partner countries that meet statutory requirements relating to nuclear nonproliferation, safety and security, while at the same time creating a relationship and foundation to facilitate effective overseas competition by the U.S. nuclear industry.

JOINT COMPREHENSIVE PLAN OF ACTION (JCPOA)

3. Senator SHAHEEN. Secretary Perry, the NNSA's 2016 "Year in Review" noted the technical expertise within the NNSA along with other DOE national laboratories played a pivotal role in support of the negotiations for the Joint Comprehensive Plan of Action (JCPOA) to ensure the scientific underpinnings of the deal were solid. Further, it noted the NNSA continued to play a leading role in JCPOA implementation by verifying the complex technical parameters of the agreement were

met. This week, Saudi Crown Prince Mohammed Bin Salman stated that if Iran builds nuclear weapons, then Saudi Arabia will, as well. What would be the likely impact of nuclear proliferation in the Middle East Region—and around the world—if the United States effectively withdraws from the JCPOA?

Secretary PERRY. DOE/NNSA will continue to leverage our unique technical capabilities in support of the Administration's goal to prevent Iran from developing a nuclear weapon. In particular, as part of our support for the International Atomic Energy Agency's (IAEA) broader safeguards mission, DOE/NNSA will continue to provide technical support, training, and expertise to the IAEA to strengthen the IAEA's ability to monitor and verify nuclear activities worldwide. Further, DOE/NNSA will work with international partners and the IAEA to prevent the spread of materials, equipment, technology, and expertise that could be used in weapons of mass destruction.

4. Senator SHAHEEN. Secretary Perry, if President Trump refuses to issue any additional waivers to continue the suspension of sanctions on Iran—and thereby effectively withdraws the United States from the JCPOA—how would the role of the NNSA regarding the Iranian nuclear program change, especially for its Office of Defense Nuclear Nonproliferation (DNN)?

Secretary PERRY. NNSA/DNN will continue to provide technical support, training, and expertise to the International Atomic Energy Agency (IAEA) to strengthen the IAEA's ability to monitor and verify nuclear activities worldwide.

QUESTIONS SUBMITTED BY SENATOR RICHARD BLUMENTHAL

NORTH KOREA

5. Senator BLUMENTHAL. Secretary Perry, as noted in your testimony, the Office of Defense Nuclear Nonproliferation will continue efforts to, "support the State Department to make sure arms control agreements enhance security, and are verifiable and enforceable." Has the President requested assistance from the Department of Energy to prepare for negotiations with North Korea?

Secretary PERRY. The Department of Energy's (DOE) National Nuclear Security Administration (NNSA) is an active participant in the interagency process run by the National Security Council, providing guidance on nuclear weapons, nuclear materials, and the nuclear fuel cycle.

6. Senator BLUMENTHAL. Secretary Perry, what role do you see the Department of Energy having in preparing the President to meet with Kim Jong-un?

Secretary PERRY. DOE/NNSA was an active participant in the interagency process supporting preparations in advance of the June 12, 2018 North Korea Summit in Singapore. DOE/NNSA is uniquely capable of and responsible for the development, production, verification, and disposition of nuclear weapons and nuclear materials, including all activities to verifiably dismantle a nuclear fuel cycle.

7. Senator BLUMENTHAL. Secretary Perry, is the National Nuclear Security Administration providing research and advice on nuclear materials and weapons to better inform the President prior to these negotiations?

Secretary PERRY. DOE/NNSA is an active participant in the interagency process run by the National Security Council, providing guidance on nuclear weapons, nuclear materials, and the nuclear fuel cycle.

QUESTIONS SUBMITTED BY SENATOR JOE DONNELLY

NUCLEAR MODERNIZATION

8. Senator DONNELLY. Secretary Perry, do you have a budget proposal for the sea-launched cruise missile warhead and an estimate of how much will it cost for fiscal year 2019 and over the five year defense plan?

Secretary PERRY. There is no funding in the fiscal year 2019 request or associated Future Years Nuclear Security Program for the Sea-Launched Cruise Missile initiative. As the Department of Defense continues the work of translating the policy of the Nuclear Posture Review, through the Nuclear Weapons Council, into requirements for the nuclear security enterprise, DOE's National Nuclear Security Administration (NNSA) will support as needed. The process building the fiscal year 2020 request will reflect any new requirements, as they are identified.

9. Senator DONNELLY. Secretary Perry, when will the NNSA Stockpile Stewardship and Management Plan be updated to include any additional requirements derived from the Nuclear Posture Review, including facilitization and production?

Secretary PERRY. The Fiscal Year 2019 Stockpile Stewardship and Management Plan will reflect the policy outcomes of the Nuclear Posture Review. Policy outcomes and initiatives will be translated into requirements by the Nuclear Weapons Council.

TRUSTED MICROELECTRONICS

10. Senator DONNELLY. Secretary Perry, your testimony highlights the importance of a trusted supply of strategic radiation-hardened advanced microelectronics, including R&D capabilities. NNSA is our nation's source for these critical supplies for our nuclear weapons. But the challenges related to the production of trusted microelectronics and circuit boards exist with all of our weapon systems, not just nuclear. The declining US industrial base and the proliferation of threats in our supply chain is creating new and dangerous ways for adversaries to attack our systems. How are you coordinating with the DOD to ensure we are investing properly—and not duplicating efforts or leaving gaps in critical areas?

Secretary PERRY. The foundry at Sandia National Laboratories produces radiation-hardened microelectronics for U.S. nuclear warheads. DOE/NNSA is working to extend this capability beyond 2025. NNSA's foundry follows security and supply chain requirements established by DOE for assuring the integrity of the people and processes used in producing critical integrated circuits and microsystems. This foundry is also accredited as a trusted supplier by the Defense Microelectronics Activity, which manages DOD's Trusted Foundry Program. In addition, DOE/NNSA continues to collaborate with DOD as they develop a comprehensive national strategy for government access to microelectronics.

NNSA NUCLEAR LABS

11. Senator DONNELLY. Secretary Perry, I believe that the government needs to be an effective steward of the taxpayer dollar. In this regard, I'd like to ask about a December 2017 DOE Inspector General Audit report that analyzed the management and operation (M&O) at the Y–12 National Security Complex and the Pantex Plant. This report was critical of a focus on cost savings as well as of the lack of cost savings achieved by the current contract structure. What are your views on how to balance between mission delivery and cost savings in the NNSA enterprise, particularly in the production plants?

Secretary PERRY. NNSA's priority at the Y–12 National Security Complex and the Pantex Plant is mission delivery in a safe and secure manner. Cost savings are only approved once NNSA determines there is no adverse effect on our safe and secure mission accomplishments. The DOE Office of Inspector General Audit analyzed cost savings achieved under the NNSA Production Office Management and Operating contract with CNS as a result of the contract merger in 2014. Since assuming the contract to manage and operate the Y–12 and Pantex production sites, CNS generated savings to NNSA under this first-of-a-kind contract through the merger, consolidation, and transformation of the sites. The intent of the merged contract is to free up savings for site reinvestment and site improvement, and that is being realized. A distinctive feature of this unique contract is that a portion of the savings generated through improved efficiency are being reinvested by NNSA to support the short- and long-term mission needs of both Y–12 and Pantex. Through reinvestment of cost savings, NNSA is appropriately balancing mission delivery with cost savings resulting from the merger.

APPENDIX A

The New York Times | https://nyti.ms/2FMlo5o

POLITICS

Cyberattacks Put Russian Fingers on the Switch at Power Plants, U.S. Says

By NICOLE PERLROTH and DAVID E. SANGER MARCH 15, 2018

The Trump administration accused Russia on Thursday of engineering a series of cyberattacks that targeted American and European nuclear power plants and water and electric systems, and could have sabotaged or shut power plants off at will.

United States officials and private security firms saw the attacks as a signal by Moscow that it could disrupt the West's critical facilities in the event of a conflict.

They said the strikes accelerated in late 2015, at the same time the Russian interference in the American election was underway. The attackers had compromised some operators in North America and Europe by spring 2017, after President Trump was inaugurated.

In the following months, according to a Department of Homeland Security report issued on Thursday, Russian hackers made their way to machines with access to critical control systems at power plants that were not identified. The hackers never went so far as to sabotage or shut down the computer systems that guide the operations of the plants.

Still, new computer screenshots released by the Department of Homeland Security on Thursday made clear that Russian state hackers had the foothold they would have needed to manipulate or shut down power plants.

"We now have evidence they're sitting on the machines, connected to industrial control infrastructure, that allow them to effectively turn the power off or effect sabotage," said Eric Chien, a security technology director at Symantec, a digital security firm.

"From what we can see, they were there. They have the ability to shut the power off. All that's missing is some political motivation," Mr. Chien said.

American intelligence agencies were aware of the attacks for the past year and a half, and the Department of Homeland Security and the F.B.I. first issued urgent warnings to utility companies in June. On Thursday, both agencies offered new details as the Trump administration imposed sanctions against Russian individuals and organizations it accused of election meddling and "malicious cyberattacks."

It was the first time the administration officially named Russia as the perpetrator of the assaults. And it marked the third time in recent months that the White House, departing from its usual reluctance to publicly reveal intelligence, blamed foreign government forces for attacks on infrastructure in the United States.

In December, the White House said North Korea had carried out the so-called WannaCry attack that in May paralyzed the British health system and placed ransomware in computers in schools, businesses and homes across the world. Last month, it accused Russia of being behind the NotPetya attack against Ukraine last June, the largest in a series of cyberattacks on Ukraine to date, paralyzing the country's government agencies and financial systems.

But the penalties have been light. So far, Mr. Trump has said little to nothing about the Russian role in those attacks.

The groups that conducted the energy attacks, which are linked to Russian intelligence agencies, appear to be different from the two hacking groups that were involved in the election interference.

That would suggest that at least three separate Russian cyberoperations were underway simultaneously. One focused on stealing documents from the Democratic National Committee and other political groups. Another, by a St. Petersburg "troll

farm" known as the Internet Research Agency, used social media to sow discord and division. A third effort sought to burrow into the infrastructure of American and European nations.

For years, American intelligence officials tracked a number of Russian state-sponsored hacking units as they successfully penetrated the computer networks of critical infrastructure operators across North America and Europe, including in Ukraine.

Some of the units worked inside Russia's Federal Security Service, the K.G.B. successor known by its Russian acronym, F.S.B.; others were embedded in the Russian military intelligence agency, known as the G.R.U. Still others were made up of Russian contractors working at the behest of Moscow.

Russian cyberattacks surged last year, starting three months after Mr. Trump took office.

American officials and private cybersecurity experts uncovered a series of Russian attacks aimed at the energy, water and aviation sectors and critical manufacturing, including nuclear plants, in the United States and Europe. In its urgent report in June, the Department of Homeland Security and the F.B.I. notified operators about the attacks but stopped short of identifying Russia as the culprit.

By then, Russian spies had compromised the business networks of several American energy, water and nuclear plants, mapping out their corporate structures and computer networks.

They included that of the Wolf Creek Nuclear Operating Corporation, which runs a nuclear plant near Burlington, Kan. But in that case, and those of other nuclear operators, Russian hackers had not leapt from the company's business networks into the nuclear plant controls.

Forensic analysis suggested that Russian spies were looking for inroads — although it was not clear whether the goal was to conduct espionage or sabotage, or to trigger an explosion of some kind.

In a report made public in October, Symantec noted that a Russian hacking unit "appears to be interested in both learning how energy facilities operate and also gaining access to operational systems themselves, to the extent that the group now potentially has the ability to sabotage or gain control of these systems should it decide to do so."

The United States sometimes does the same thing. It bored deeply into Iran's infrastructure before the 2015 nuclear accord, placing digital "implants" in systems that would enable it to bring down power grids, command-and-control systems and other infrastructure in case a conflict broke out. The operation was code-named "Nitro Zeus," and its revelation made clear that getting into the critical infrastructure of adversaries is now a standard element of preparing for possible conflict.

The Russians have gone farther.

In an updated warning to utility companies on Thursday, Homeland Security officials included a screenshot taken by Russian operatives that proved they could now gain access to their victims' critical controls.

American officials and security firms, including Symantec and CrowdStrike, believe that Russian attacks on the Ukrainian power grid in 2015 and 2016 that left more than 200,000 citizens there in the dark are an ominous sign of what the Russian cyberstrikes may portend in the United States and Europe in the event of escalating hostilities.

Private security firms have tracked the Russian government assaults on Western power and energy operators — conducted alternately by groups under the names DragonFly, Energetic Bear and Berserk Bear — since 2011, when they first started targeting defense and aviation companies in the United States and Canada.

By 2013, researchers had tied the Russian hackers to hundreds of attacks on energy grid and oil and gas pipeline operators in the United States and Europe. Initially, the strikes appeared to be motivated by industrial espionage — a natural conclusion at the time, researchers said, given the importance of Russia's oil and gas industry.

A version of this article appears in print on March 16, 2018, on Page A1 of the New York edition with the headline: U.S. Says Hacks Left Russia Able To Shut Utilities.

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APPENDIX B

Washington Examiner

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Tuesday, April 10, 2018

Energy Secretary Rick Perry is focused on an "all-of-the-above" energy strategy as he moves into his second year as head of the Energy Department. He tells the Washington Examiner in an exclusive interview that the Trump administration is not only focused on fossil fuels, but also wants to support a global market for U.S.-made solar and renewable energy technologies.

Perry is also working with the White House on rolling out an energy strategy for Appalachia this year, which will look to build out the petrochemical capacity of coal country, which is now at the center of the shale natural gas boom.

He is also pushing ahead on the national security front by ramping up a new cybersecurity office at the Energy Department to be the lead agency in helping the energy industry respond to cyber attacks. He is also heading up a robust agenda to modernize the nation's nuclear weapons arsenal, which is a central part of the president's fiscal 2019 budget and Nuclear Posture Review. The Energy Department houses the National Nuclear Security Administration, which oversees the nation's nuclear weapons enterprise. Nearly half of the Energy Department's budget in fiscal 2019 goes to NNSA.

Washington Examiner: I just wanted to first touch on coal, and understand where you are. You were trying to get a proposal through the Federal Energy Regulatory Commission, and I was just wondering if there is a new iteration of that in the works, and if you're looking to do something after that? I know they're doing something as well, but just wanted to see what you were doing for the power plant side, what you're doing for coal?

Rick Perry: Let me back up . . . We're an all-of-the-above department. We're not here just to promote the fossil fuels. We're here to promote a wind, and solar, and hydro, and maybe some forms of energy that we haven't even dreamed up yet. But for the foreseeable future, fossil fuels are going to play a really important role, not just in America, but in the world. By, I think, 2040, over 70 percent of the electricity that's created in the United States is going to come from fossil fuels. So, our goal is to produce it, develop it, make it available cleaner. That's the key for us. So, we're promoting American technology around the world; we're promoting American fossil fuels around the world.

As the governor of Texas, I oversaw a rather interesting period of time as we transitioned out of older, inefficient power plants to a massive amount of natural gas plants. We put programs to move old, dirty-burning diesel engines out of the fleets of big fleet operators to cleaner burning engines. We had the largest wind energy development in the nation. Texas developed more wind energy now than five countries. So, I've got a history of being an all-of-the-above guy promoting it. It makes a lot of sense from an economic standpoint for us to be selling our coal, exporting it. Obviously, LNG [liquid natural gas]. Crude, now. So, America is in the energy business. My role in that is not only to be a really good salesperson as we travel around the country, we interact with world leaders, my counterparts, but also to promote this technology that we have, CCUS, for instance.

Washington Examiner: The clean coal technology.

Perry: Clean coal technology. Yes, sir. The carbon capture, utilization, sequestration. It's really an exciting time to be the secretary of energy, partly because of American ingenuity, American technology, and we're just coming out of a period of time from, let's say, the mid-70s when America was all about regulation. You know, we're going to regulate our way forward, no matter how draconian it may be or how dark the future may look. We don't believe in that. We believe that it's innovation rather than regulation. Because if you will give Americans stability, predictability in the regulatory world, they will risk their capital. They will go spend dollars. A lot of those dollars will go into research and development, our national labs and things that we do there. I just think it's a fascinating time to be the secretary of energy, and an all-of-the-above strategy is the wise way to go.

Washington Examiner: We're now becoming a net exporter of natural gas. What's your outlook there?

Perry: We are the No. 1 oil- and gas-producing country in the world. We will soon be the net gas exporter. So, it's a fine line producing versus exporting. But the point is, 15 years ago, if someone had said you and I were going to be having this conversation, "Boy, you boys are not in touch with reality."

Washington Examiner: You're talking about innovation over regulation, or laying the foundation for the private sector to come in, the private sector has come in, they're investing more. They're asking you to approve facilities for export. Where do you see that role for the government in helping move faster toward an energy export economy?

Perry: So, I've got a history. I was the governor of the 12th largest economy in the world, and during that period of time, one of the things that I heard often was the regulatory climate is what affects us more so than anything, have a predictable, stable regulatory climate. The way we did that in my home state was we said, "OK, here are the rules. You've got the rules written down. When somebody comes to get a permit, here are the rules; you make these rules. Those get made by legislators or by agencies. I mean there's a process that you go through to get those. But once those are out there, government's role should be simply: "Here are the rules. You meet these rules, here's your permit." That's not what we saw in the last eight years at the federal government, in particular. We saw a government with their thumb on the scale. They had a definite bias against coal. They had a bias against nuclear, and if you were in the renewable business, hallelujah.

We don't think that's fair. We like for people to have a lot of options out there from a national security standpoint and from the security of our citizens standpoint, so we believe that if you will have a stable, fair, and if you don't like the rules, work through the process to change them, but don't stop a permit going forward because you've got a political bias against a particular type of fuel. The Trump Administration all across the board, whether it's EPA, Department of Interior, whether it's Commerce, whether it's over here at DOE, the message is clear. You have a regulatory climate that is fair, predictable, and if a rule is blocking something going forward, if it's in the way, if it costs more than it benefits—out the door.

Washington Examiner: Now, I know for LNG, you have principal authority to approve permits in line with FERC.

Perry: FERC has a role. They're an independent agency. I don't mind giving them advice. They don't mind giving me advice.

Washington Examiner: Is there any specific way you're looking to speed up permits? Is there a certain number you want to see approved in the next year?

Perry: The market will decide what's the right number. My job is to basically say, here are the rules. You meet the rules, here's your permit. My job is not to say, "Well guys, we're looking at this, and we think the market is a little oversaturated." That's not our job. That is for the private sector to decide how they're going to risk their capital, and when they think that the market is ripe for them to be building an LNG facility, they'll show up here and make the application. At that particular point in time, our job is to look and make sure that they follow all the rules and then deliver a permit.

Washington Examiner: There are new market opportunities in Appalachia. There's a lot of natural gas in Pennsylvania, in Ohio, a lot of liquids in Ohio.

Perry: Kentucky, Ohio, Pennsylvania, West Virginia.

Washington Examiner: They're talking about opening refineries for things like ethane, which is a precursor to a whole bunch of other things. The administration seems to be supportive of that. How do you see that coming to bear in the next year or so?

Perry: The administration is highly supportive of that. The president really likes the concept of duplicating the petrochemical footprint that's in the Gulf Coast region in Appalachia. Here's why it's wise. As the governor of Texas in August and September, I always was very wary about hurricane season, a major hurricane, a category five, storm up the Houston ship channel. Devastating not just to the city of Houston and the millions of people that live there, but that petrochemical footprint. It could literally knock out the economic and national security basis of this country. So, wouldn't it make sense to have a duplicate of that, if you will, in another region of the country? I think Appalachia makes a lot of sense, partly because of the economics that come along with that, the transition in a region of the country that could really use the help economically, sitting on top of a massive amount of natural gas in the Marcellus and then below that the Utica, and the close proximity to the East Coast, to those ports there that they could be sending that value-added product out of.

So, I think it's a brilliant concept that the president really likes. I think that the members of Congress, as they are educated on it and take a look at it, there'll be support in Congress for that. At the end of the day, the private sector will build

it out. The private sector will be the ones who decide. Our job will be, don't get in the way. We have our role to protect the environment, protect the people with our rules, "You meet the rules, here's your permit."

Washington Examiner: That proposal is attracting a lot of investment to the tri-state area—West Virginia, Ohio, Pennsylvania—looking for places to set up, seeing the huge resource there. How's that affecting DOE as far as the workload? Are you looking to set up an Appalachian division?

Perry: I think we're yet to announce anything from the standpoint of here's how DOE is going to be structured around this project, but we'll be very involved at the appropriate time. I think it's a little early to be laying it out with great specificity. But the other side of that is that we're not too far away from being able to do it.

Washington Examiner: You mentioned the hurricanes and the threat they pose and that being a reason for expanding refinery capacity. The other threat is cyber, and you have structurally proposed some changes at DOE to embrace that. Also, today's news about Russian sanctions and some of what was revealed at the White House that the Russians were trying to undermine the electric grid. What is DOE's role in combating that?

Perry: So, from a bit of a high-level look down, the Department of Energy is the sector-specific agency dealing with the protection, the resiliency of the electric grid that includes any natural disasters that would occur. It also covers any cyber attacks that would occur. So, the decision was made to clearly define that, to stand up an office that sent that message clearly, not to just the public, but also to our friends on the Hill, that this is where sector-specific, relative to the electrical grid, the real work is going to be to protect it. So, CESER [Cybersecurity, Energy Security, and Emergency Response], it's cyber, and the back end of that is emergency recovery. So, this has a number of areas, cyber is in there, the security of the grid, you have emergency response and recovery, all in one shop. One of the things the president wants to do is to, he talked about on the permitting process in his infrastructure plan, a one-stop shop, if you will. We're a long way away from that because of the massive amount of government agencies that if you're building some type of infrastructure, you got to go to all these different agencies. Sometimes, it's pitting agency against agency. The president wants to cut through all of that as much as he can.

On cyber for the electrical side, that's one of the things that we're doing, clearly defining that this is where you come if you're in the electrical generation business and you've got big panels, the Department of Energy is going to be here to help you deal with any cyber attacks. If you're in the transmission business, this is the place you would come to partner. We've got national labs that work on this, we've got a real focus on cybersecurity, dealing with the resiliency and the protection of the electrical grid.

Washington Examiner: There had been some concerns in the past by the electricity sector that they would have to go to DHS, Department of Homeland Security, but they'd rather go to FERC or DOE. So, is that what you're addressing?

Perry: DHS certainly has a very important, I would suggest even a lead, role in global cybersecurity, the issues that are dealing with the Department of Homeland Security [are] efforts that you would see in the attack of a hospital computer system. DHS would be the lead on that. With that said, we work very closely together. There's no space between DHS and DOE. We've probably from time to time borrowed some of their things; from time to time, they use our national labs to see if they can break a particular piece of equipment, or get into all the things they do.

Washington Examiner: Is the president asking the Department of Energy to do anything in light of the Russian revelations? Are you collecting information? What is your role as they impose sanctions? Are you being asked to do anything by the White House in light of these attacks?

Perry: We know what our duties are. Some of them we can share with you, and some of them we can't. We've pretty much shared with you our public side of what we do. You know, there's a reason that the Department of Energy and the secretary is on the National Security Council. There's a lot of work out there that we classify, and we're right up to the edge of that now.

Washington Examiner: That brings me to National Nuclear Security Administration, and the arsenal. The budget proposal for NNSA is pretty robust. There are some reforms that the national academies and others have proposed. Where do you see the reorganization of the nuclear weapons arm of DOE in the next few years?

Perry: Again, I want to take you back to a little higher level and observe. For 25, 30 years, the members of Congress did not see the importance of modernizing our weapons program. They patched it up from time to time, but there was no effort to modernizing. I moved into a house in Austin one time that hadn't had any upgrades done to it for about 40 years. I mean it literally still had fuses that you

screwed into the electrical system, OK? This was in the early 90s, but still that's maybe a poor analogy, but these systems are old. They deteriorate. Both the DOD and the DOE recognized that we have a responsibility, and we were getting to a point where these weapons systems were at the end of their ability to just sit on the shelf and replacing a few parts here and there wasn't enough. So, I think the administration wisely and Congress, saluting properly, they added dollars that have gone to modernize that fleet, and it's going to be a lot of work. NNSA is going to be tested if they are up to it.

But the better news in all of that is that the message that it sends around the world is that United States technology, United States readiness is going to be as good as it's ever been. That is an appropriate response and an important duty at the DOE.

Washington Examiner: What was the meeting you had with the president on Monday at the White House? What was that about?

Perry: Man, in an hour we covered the watershed. We talked about a lot of different things. As a rule that I don't break, I don't talk about my conversations with the president. One thing I will tell you is that we talked about some veterans' issues because we have a program over here called ACTIV, A–C–T–I–V, which we use our massive computing capability to deal with traumatic brain injury, post-traumatic stress, and mental sides of the veteran world. But it's more than just the veteran; it reaches into the world of first responders into professional athletes anywhere in the country. It could be a young lady who played soccer who's had a concussion. The data that we're going to be making available is literally going to change the world if you've had a traumatic brain injury or been affected by post-traumatic stress.

Washington Examiner: Why did the president want to hear about that? Is he planning something?

Perry: I don't know whether he wanted to hear it or not. I wanted him to hear it. That was my job, is to share that with him so that he understood the importance of what we were doing over here. And you know, the president's curious. He asked a lot of questions. He wants to know what's going on, "What have you been doing? How's this sector, that sector doing?" I mean, he covers the watershed. So, we talked about a lot of different things. What he didn't talk about was me changing jobs. I know there's a lot of interest in that over the last 48 to 72 hours. The president knows I like where I am. He knows that we have a done a really good job of getting this agency focused, particularly in those areas that he's interested in, selling American, running an agency effectively. It was a good conversation, and I'm glad I got to sit down with him and share with him. So, he knows what's going on at DOE. He knows what our priorities are, he knows about what we're doing with cyber, he knows what we're doing on the promotion of American energy resources globally. He knows what we're doing on a regulatory front.

This veteran's program, some might look at and say that's a little outside of your lane. Actually, it's not because of the national labs and what the national labs had been doing on brain science for a long time and this massive amount of computing capability now. So, we're right up to the point of both machine learning, verging on artificial intelligence, if you will, with computers of that capacity. Five of the 10 fastest computers in the world belong to the Department of Energy.

I've just got a passion about these veterans, particularly veterans who have had both TBI and post-traumatic stress events, and we know that both in professional sports and and public school sports. The public that we will be servicing with this program is relatively small. Obviously, we are doing some programs with the VA as well. There's one called the Million Veterans Program, which draws the blood, runs the DNA, and then be able to go back to the vet and say, here are the things you have a propensity [for], here's what you need to be looking out for as you go on with your life.

Washington Examiner: Have you been at the Department of Energy a year yet?

Perry: March 2 was my one-year anniversary. That's also Texas independence day. So, it's easy for us to remember anyway.

Washington Examiner: How do you see the next year shaping up?

Perry: I look back over the last year and say what was the most successful thing? It was putting a really good professional team together, and we still have a few openings out there. But we brought in a highly capable professional team of men and women who are serving well.

So, the next year, what I full well expect is we'll get the 2018 budget done, knock on wood, and we'll have some surety and our funding going forward. We'll have the 2019 process in place. The Senate and the House will both look at what we've done and say, "good job," continue with the tweaks that they want. Certainly given us direction on what we need to be working on together. But cyber and the standing up with the CESER office, continuing to promote American energy, that is probably

as target-rich an environment as there is. We've got trips into India, into Europe, into some other regions ... South America, of which the potential for American innovation, American technology, American products, whether it's fossil fuels or whether it's our solar and wind energy technology. I think the potential here in the next year is quite good.

Domestically. This Appalachian plan, we hope to be able to not only flesh it out, but to announce it. This is one of those on the infrastructure side. I mean, the president's vision about infrastructure is really big, as it should be. I've had the privilege of visiting almost every state in the nation, not in the last year, but over my public service years, and what I saw was a crumbling infrastructure. Roads that need work, bridges that need work, and then, when you think about rail, wires, and pipelines, those are owned by the private sector. So, there's a lot of infrastructure out there that we need to see built back up and, in some cases, expanded.

For instance, pipelines in the Northeast, that's a real restriction for citizens living in, say, New York. They don't have access to all of this abundance of energy and they're having to pay substantially higher rates, or in the case of these really cold snaps that came along, they were burning fuel oil up there. I mean, it sure would have been a lot better for the air if they were burning natural gas.



Mark Warner eyes liability for software developers as key way to shore up cybersecurity.

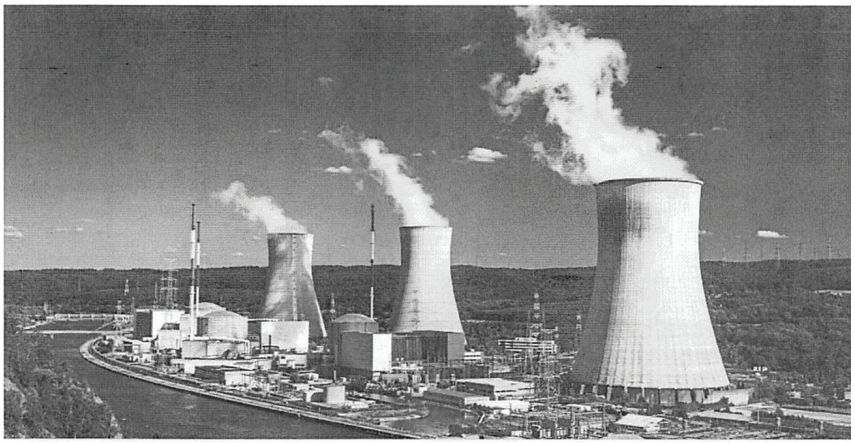




Trucking industry pushes teen drivers to fill shortage.



New England faces 'horror story' of expensive power.



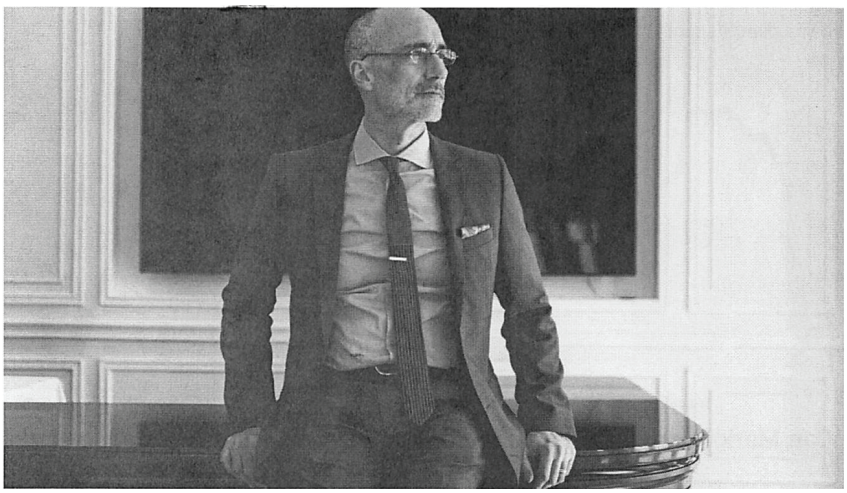
Environmentalists split on letting carbon-free nuclear power die.



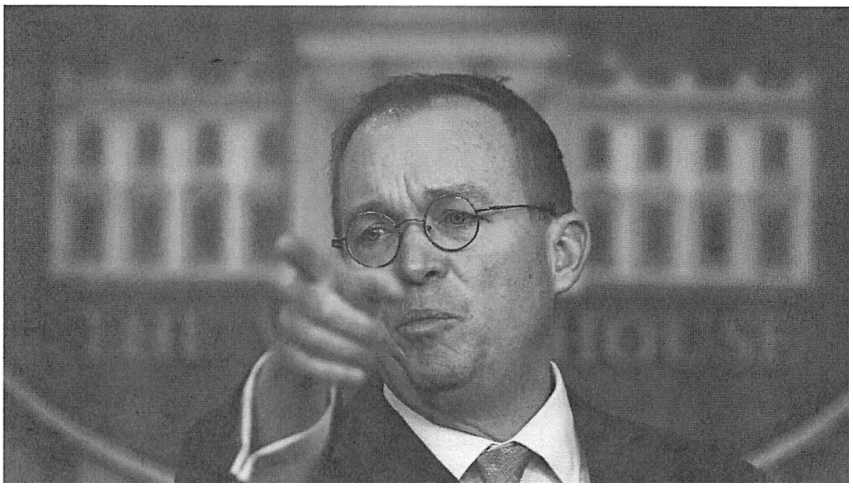
The Navy wants just one littoral combat ship this year, but it may get three.



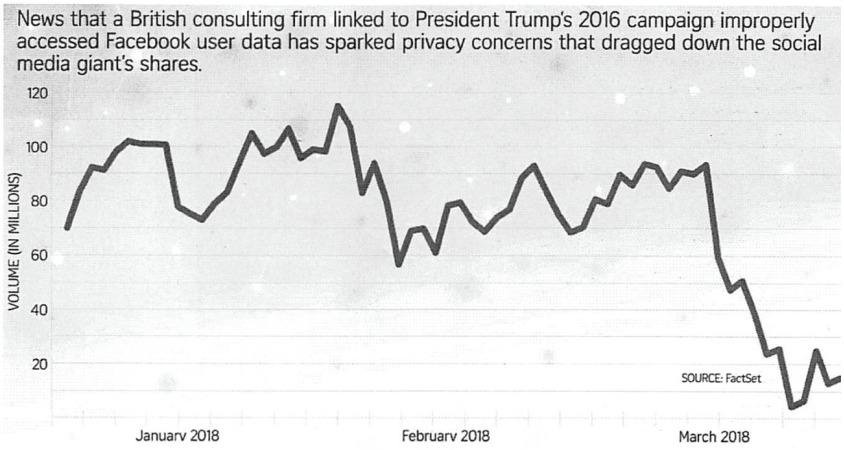
Mark Zuckerberg heads into Capitol Hill firestorm.



Arthur Brooks: 'I'm going to stay at it'.



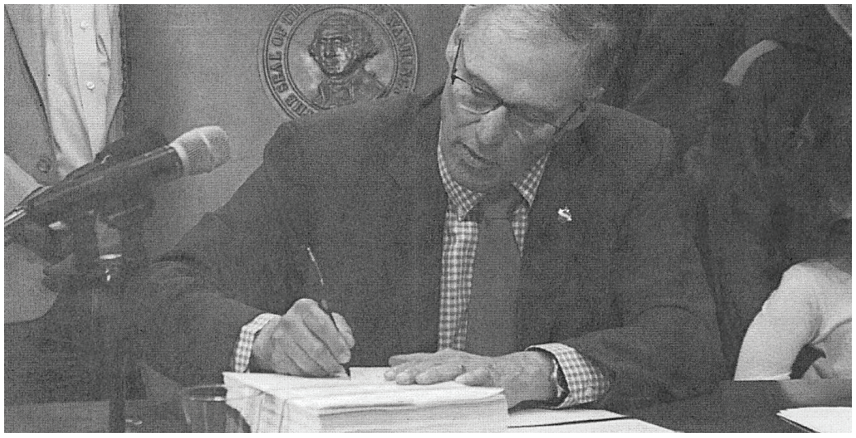
Mick Mulvaney plans to defang CFPB, Democrats ready to pounce.



Can mark Zuckerberg convince lawmakers to be Facebook's friends?



Would the Senate banking bill boost economic growth?



Washington becomes first state to ban nonstick chemicals in food packaging.



Long-simmering battle over e-cigarettes erupts as FDA clamps down on nicotine.



Perry travels to India for high-level energy talks.

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, APRIL 10, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

UNITED STATES TRANSPORTATION COMMAND

The committee met, pursuant to notice, at 9:31 a.m. in Room SD–G50, Dirksen Senate Office Building, Senator James M. Inhofe, presiding.

Committee Members present: Senators Inhofe, Wicker, Fischer, Rounds, Ernst, Tillis, Sullivan, Cruz, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, King, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. The meeting will come to order.

The committee today meets to receive testimony from General Darren McDew on the current state of the U.S. Transportation Command [TRANSCOM].

In the contested environment described within the new National Defense Strategy [NDS], TRANSCOM's capacity to mobilize and deploy forces across the globe becomes ever more crucial to our ability to project power.

The National Defense Strategy provides clear focus on the great power competition with China and Russia. We have been talking a lot about that recently.

Further, the National Defense Strategy emphasizes the importance of resilient and agile logistics.

The assumptions that U.S. forces will have uncontested access to airspace and sea lanes is becoming less and less likely.

General McDew, you appear before this committee at a time when these responsibilities are of vital importance to the nation's security. Our adversaries are not standing still. They are moving fast, and we are very distressed at some of the things that we see on a firsthand basis. TRANSCOM's job is to ensure that our operational plans contain valid assumptions for how our soldiers, sailors, marines, and airmen will get to the fight and how they will be sustained in a contested forward environment.

Efforts are currently underway to conduct an overarching mobility study that would articulate how TRANSCOM would operate in a contested environment as well as execute its joint distribution and deployment responsibilities. Our current approach relies on moving materiel to large air and sea ports which serve as efficient hubs but are also well known to our adversaries and would be very hard to defend against a precision weapon attack.

The Department must begin to focus on improving resilience. Anything less would significantly increase the risk of our missions.

So we thank you for appearing today and look forward to your frank discussion on TRANSCOM's potential problems and successes.

Senator Reed?

STATEMENT OF SENATOR JACK REED

Senator REED. Well, thank you very much, Mr. Chairman. Let me join you in welcoming General McDew to the committee this morning and to testify on the plans and programs of the United States Transportation Command, or TRANSCOM, as we continue to review our fiscal year 2019 authorization. We are grateful to you for your service and the service of the men and women of TRANSCOM. Please thank them for us and their families who also serve with great distinction.

The men and women of TRANSCOM perform duties that sustain the whole Department of Defense [DOD] effort in protecting our nation's security. With the competitive edge and its ability to deploy and sustain America's armed forces, TRANSCOM provides DOD with unique capabilities that we have come to expect and perhaps too frequently take for granted. TRANSCOM forces are busy supporting all of the combatant commanders every day, and without these TRANSCOM forces, the United States would be at a significant disadvantage almost everywhere in the world.

TRANSCOM faces a number of daunting tasks, including a unique set of cyber threats because you must work extensively with private sector entities in the transportation and shipping industries to support DOD deployment operations.

Three years ago, the committee issued a report on certain aspects of TRANSCOM's cybersecurity situation. General McDew, I would like to get an update from you on the progress in the cybersecurity efforts that you have made since last year.

The Ready Reserve Force, the RRF, a group of cargo ships held in readiness by the Maritime Administration, is aging and will need to be modernized over the next decade. Last year, the committee authorized the Department to start a program to recapitalize the Ready Reserve Force by authorizing DOD to purchase up to two foreign-built vessels while the Navy moves forward on a plan to design a family of auxiliary vessels for a number of uses, including recapitalizing the Ready Reserve Force.

This authorization to purchase two vessels was intended to cover recapitalization requirements for the first several years of the future defense program. However, this year, the administration is asking to increase that authorization to include purchasing up to 24 foreign-built vessels. General McDew, I am interested in your

perspective on this request, whether such a large increase is needed, and if there are any alternative options.

In addition to the Ready Reserve Force, the Defense Department also needs to ensure that the Civil Reserve Air Fleet, or the CRAF, the CRAF program which provides as much as 40 percent of wartime airlift needs, remains viable after operations in Iraq and Afghanistan and will be able, as needed, to surge capacity in the future. General, I am interested in your views on the state of the fleet and if anything needs to be done to ensure their readiness.

Our global transportation capability, owned and managed by TRANSCOM, has been one of our asymmetric advantages for many years now. However, we cannot assume that potential adversaries will allow us free rein in this area in the future. General McDew, I understand that you have been conducting an analysis to assess requirements for an environment where our mobility forces would be challenged. I also understand that the Department will share those results later this year. Perhaps you could give us an update on when we are likely to see the results of your analysis.

Thank you again for your decades of service, and I look forward to your testimony.

Thank you, sir.

Senator INHOFE. Thank you.

General McDew, we would like to hear your opening statement. Your written statement will be made a part of the record. Thank you for being here. You are recognized.

STATEMENT OF GENERAL DARREN W. MCDEW, USAF, COMMANDER, UNITED STATES TRANSPORTATION COMMAND

General MCDEW. Thank you, Senator Inhofe, Ranking Member Reed, and distinguished members of the committee. It is an honor to be with you this morning, and thank you for your leadership and unwavering support you give the men and women who serve our great and mighty nation.

I also want to thank you for the opportunity to represent the United States Transportation Command and the work of our soldiers, sailors, airmen, and marines and coast guardsmen, civil servants and contractors and their families. The men and women who make up this command underwrite the joint forces' lethality with unparalleled capability, and I am exceptionally proud of what they do. As a matter of fact, we are probably the only command that has a watch party for this event. So they are all watching back home in the cornfields of Illinois right now.

USTRANSCOM's total force team works every day to provide our nation with a broad range of strategic capabilities and options, but they do not do it alone. I wish every American citizen could understand how much we rely on the nation's truck drivers, conductors, commercial pilots, mariners, stevedores, and much, much more to meet national defense requirements. USTRANSCOM is a global warfighting command with functional expertise and we move and sustain the joint force, but we are also responsible for operating the expansive joint deployment and distribution enterprise. I can say with full confidence that today USTRANSCOM stands ready to deliver on behalf of national objectives anywhere at any time.

However, I do remain concerned about the future. As we refocus our efforts on great power competition, we are faced with potential challenges to our democratic values, our security. In this environment, we must always be ready. As we increase lethality across the joint force, the resources necessary to transport and sustain America's military must keep pace. Our ability to project a decisive force is foundational to the National Defense Strategy. The size and lethality of the force is of little consequence if we cannot get it where it needs to go when it needs to get there.

To that end, the 2018 National Defense Authorization Act [NDAA] directed a mobility capabilities and requirements study. This study will determine if in fact the current inventory of mobility assets is sufficient to support national security requirements. The study will consider the impact of multi-domain contested environments as well as the implications for attrition. The outcomes of this study will provide valuable insight to ensure we continue to meet today's needs while simultaneously evolving for tomorrow.

But USTRANSCOM cannot get there alone. We must have the weight of the entire nation behind us to ensure that when our diplomats go to the negotiating table, they do so from a position of strength. One of the greatest threats to that strength is malicious activities in the cyber domain. Our adversaries no longer have to stop us with bombs and bullets. All they have to do is slow us down with 1's and 0's. That, ladies and gentlemen, is the challenge of our time. We must grow in this domain as a nation so that we can protect ourselves and protect each other.

We also face challenges in the physical domain. The current ratio of active duty and reserve component forces means we must rely on the reserves and the National Guard to fulfill wartime requirements. For 3 decades, our reserve component has been used to sustain day-to-day operational requirements, a function for which they were not properly resourced or structured. Meeting the challenges of the future may require adjustments to mobilization authorities or force mix to assure access to vital capacity.

While USTRANSCOM operates the most robust patient movement system in the world, we lack sufficient capacity to surge for a large-scale conflict. The combination of a number of factors decreases the likelihood that we will see the same high survival rates we have seen in the more recent conflicts. We continue to work with the services, the Joint Staff, and the national health enterprise to address these challenges.

Finally, if we are to maintain our nation's power projection capabilities, we must first acknowledge our waning sealift capacity. The U.S. flag fleet has steadily declined since World War II from 1,288 ships in 1951 to 81 U.S.-flagged ships operating in international trade today. The degradation of the fleet also means fewer qualified merchant mariners, the simple backbone of our maritime industry. With the decline in our maritime capacity, it is becoming increasingly difficult to characterize America as a maritime nation.

In response to an aging organic sealift fleet, the fiscal year 2018 Defense Authorization Act authorized the purchase of two used vessels. We thank you for supporting this first step.

Thank you again for inviting me to speak to you today. Please say hello to all the folks in the cornfields of Illinois who are watch-

ing you today. And we thank you very much for allowing me to speak on behalf of USTRANSCOM and I believe America's heroes and those of the civilians, contractors, and servicemembers who project and sustain power around the globe every single day. Thank you.

[The prepared statement of General McDew follows:]

PREPARED STATEMENT BY GENERAL DARREN W. MCDEW

AMERICA AS A SUPERPOWER

The United States of America is the world's only superpower. The Nation maintains this status because of our global influence and ability to project power around the world at a moment's notice. United States Transportation Command (USTRANSCOM) is a critical element in this national capability. The men and women who make up this command provide an unparalleled expeditionary capability and underwrite the Nation's ability to rapidly respond to emerging crises. A global, warfighting combatant command (CCMD) with functional responsibilities, USTRANSCOM's role in projecting and sustaining power is the cornerstone of the Joint Force's efforts to meet national policy objectives.

Established in 1987, United States Transportation Command's marked its 30th Anniversary in 2017. Operationalized during Operations Desert Shield and Desert Storm, the command now delivers global mobility solutions every day in both peace and war through its component commands: Military Surface Deployment and Distribution Command (SDDC), Military Sealift Command (MSC), Air Mobility Command (AMC) and what I call our fourth component, the commercial industry. Together, with our subordinate commands, Joint Transportation Reserve Unit (JTRU) and the Joint Enabling Capabilities Command (JECC), our Total Force team of Active Duty, Guard, Reserve, civilians and contractors, remains postured to preserve the Nation's comparative advantage and provide the President a broad range of options today, and tomorrow.

In the past year, USTRANSCOM bolstered American influence around the globe. We exercised our deployment capabilities, sustained combat operations, and managed the expansive Joint Deployment and Distribution Enterprise (JDDE). USTRANSCOM's team of Joint Warriors also enabled the movement of America's sick and wounded to medical treatment facilities worldwide, relocated thousands of families, and responded to every Geographic Combatant Command's requirements without fail. We performed 33 Brigade Combat Team (BCT)-sized movements, shortening deployment timelines and demonstrating our ability to deliver a decisive force at the time and location of our choosing. When hurricanes ravaged Texas, Florida, Puerto Rico, and the United States Virgin Islands, our joint enabling and strategic mobility assets deployed to provide critical capabilities including planning support, aeromedical evacuation, and life-saving supplies. Our efforts demonstrated the Nation's resolve and strengthened partnerships worldwide.

MISSION

The President of the United States designated USTRANSCOM's five primary roles and responsibilities through the 2017 Unified Command Plan (UCP). The UCP established USTRANSCOM as the Joint Deployment and Distribution Coordinator (JDDC), merging and expanding our previous roles as Distribution Process Owner and Global Distribution Synchronizer. This evolution of our responsibilities provides extended authorities to coordinate operations and planning across all domains spanning the JDDE. As DOD's Single Manager for Transportation, USTRANSCOM provides common user and commercial air, land, and sea transportation, as well as terminal management and air refueling in support of deployment, employment, sustainment, and re-deployment. We are responsible for providing joint sourcing solutions for all mobility forces and capabilities, in close coordination with the other CCMDs in our role as the Mobility Joint Force Provider. Enabling America's unprecedented patient movement capability, we arrange timely and safe movement for the Nation's ill and injured in support of the CCMDs, other U.S. Government agencies, and key international allies and partners as the DOD Single Manager for Patient Movement.

Our fifth and final UCP responsibility is the provision of Joint Enabling Capabilities, performed by the JECC. The JECC provides alert postured communications, planning, and public affairs capabilities to accelerate the formation of Joint Force headquarters. Delivering high-impact experts with knowledge in joint warfighting

functions, the JECC supports SECDEF-directed deployments as well as immediate Global Response Force (GRF) missions. This Total Force team offers a unique capability not replicated by any other organization within DOD.

THE CONTEMPORARY SECURITY ENVIRONMENT

USTRANSCOM has been successful for 30 years, but the Nation is at an inflection point, and we must evolve to remain viable in the future. Volatile geopolitics, shifting demographics, and emerging technologies are changing the character of war. These considerations are changing societies and the way we fight—they are also changing why and where wars are fought, and who is fighting them. Today, every domain is contested, with conflict unconstrained by Geographic Combatant Command boundaries or principles of sovereignty. Lower barriers of entry are expanding our adversaries' access to disruptive technology, placing our technological superiority at risk. Mobility forces may be required to transport and sustain US and allied forces while under persistent multi-domain attack, including deception and data manipulation in cyberspace. We face the most complex and volatile security environment in recent history. Our past successes will not ensure success tomorrow.

The Joint Force has taken domain dominance for granted for 70 years, but we can no longer assume logistics will arrive in theater unchallenged by our adversaries. In an effort to better understand contemporary threats and operate effectively in the current context, USTRANSCOM hosted a series of Contested Environment Wargames and Summits. Lessons learned from these events drove changes in how we plan for attrition, cyber, mobilization, authorities, access, and command and control. We now consider the attrition of organic sealift and airlift fleets in our planning and requirements analysis, as well as the need for global mission command of disparate mobility forces. A growing realization that the Homeland is no longer a sanctuary led us to plan for denied access to our own strategic nodes, as well as those abroad. Our analysis revealed that an adversary can derive immense strategic benefit from cyber operations alone. The reality of our time is that adversaries no longer have to stop us with bombs or bullets; all they have to do is slow us down with ones and zeroes. Yet our preparation for these challenges cannot exist solely on paper. We must make some tough fiscal decisions today, prioritizing readiness and modernization to assure our strategic advantage tomorrow.

OUR GLOBAL PERSPECTIVE

In a contemporary environment filled with uncertainty and rising geopolitical tensions, the logistics enterprise must always be ready. Key to this preparedness is USTRANSCOM's effort to set the globe for logistics on behalf of the Secretary of Defense and the Chairman of the Joint Chiefs of Staff, continuously shaping the Nation's ability to respond to simultaneous threats within a trans-regional, multi-domain, and multi-functional security environment. With our global perspective and responsibilities, this command is uniquely postured to balance resources worldwide and understand the risks associated with surging and swinging mobility assets between theaters.

Setting the globe for logistics involves balancing resources historically employed in a theater-centric paradigm and regularly using the worldwide network of modes, nodes, and routes to ensure the network remains active and resilient. Balancing and using the globe builds resilience within the JDDE, maximizes scarce strategic transportation assets, and strengthens relationships with our fourth component, allies, and strategic partners. Balance requires having the proper authorities to position and reposition mobility assets, thus enhancing agility, mitigating risk across the JDDE, and increasing the President's decision space. Effectively using the globe means unshackling ourselves from our habituated uses of the JDDE. The previous practice of only using finite strategic nodes for deployment and sustainment operations limits the Joint Force's flexibility to compete over the long term and deter conflict in multiple regions, while preparing to win in any war. We must implement new and innovative ways of using the globe by fostering strong partnerships and agreements with commercial industry, allies, and other partners to build network resiliency, expand our competitive space, and proliferate our power projection capabilities. When USTRANSCOM sets the globe, it creates options . . . and options create opportunities.

CHALLENGES AND OPPORTUNITIES

The Secretary of Defense has deemed his number one priority, "Restoring Readiness as We Build a More Lethal Force." As we restore readiness and increase lethality, the resources necessary to transport and sustain the Joint Force must keep pace. Current operations and on-going sustainment requirements engage a sig-

nificant portion of the total force, limiting capacity to surge or meet increased deployment and distribution demands. The DOD has historically viewed the Reserve Component as a strategic reserve. However, capacity shortfalls in the Active Component required the DOD to leverage Guard and Reserve assets to maintain steady-state activities for nearly three decades. Several conditions exacerbate this concern; fiscal uncertainty, aging fleets, workforce shortages, and an increasingly contested maritime domain. Despite the many challenges of our time, global integration, emerging technologies, and the collective experience of our mobility forces present opportunities to strengthen our distribution networks and improve the effectiveness of our logistics operations while decreasing risk to force. Whether to pursue opportunities or overcome challenges, we must continue to invest in key areas to secure victory on tomorrow's battlefields. These areas fall into the following four broad categories, which mirror USTRANSCOM's priorities: Readiness, Cyber, Evolving for Tomorrow, and Workforce Development.

Readiness: State of the Command

USTRANSCOM stands ready to deliver in support of national objectives today. However, as we look to the future, contested domains and fiscal uncertainty present a threat to the viability of the JDDE. If we fail to address a number of these challenges in the coming years, the strength on which the Nation has historically relied will no longer be there when needed. Specifically, we must address issues of capacity, availability, and proficiency within USTRANSCOM's air, land, and sea components; shore up commercial industry's capacity and security gaps; and provide the necessary resources to rebuild readiness and modernize the mobility force.

Fiscal Uncertainty

The Budget Control Act (BCA) and recent Continuing Resolutions prevent the force from adequately addressing our most pressing readiness concerns. These legislative measures force the Services to prioritize immediate operational needs over prudent long-term planning and investment, eroding readiness over the long term. Specifically, the BCA prevents the Services from adequately manning, training, and equipping their forces for contemporary challenges, ultimately threatening USTRANSCOM's ability to deploy forces when necessary. After more than 16 years of conflict, rebuilding readiness and modernizing the force is a national imperative.

However, timely and predictable funding is essential if we are to make progress toward meeting tomorrow's demands; the uncertainty that comes with government shutdowns and continuing resolutions only delays these efforts.

Sealift

When the United States goes to war, USTRANSCOM moves 90 percent of its cargo requirements with the strategic sealift fleet, which consists of government-owned ships augmented by the commercial U.S.-flagged fleet. The ability to deploy a decisive force is foundational to the National Defense Strategy, as the size and lethality of the force is of little consequence if we are unable to project power in the pursuit of national objectives. Therefore, the readiness of the entire strategic sealift portfolio, both organic and commercial, remains the top priority for USTRANSCOM.

USTRANSCOM's Navy component, Military Sealift Command (MSC), controls the organic strategic sealift ships that deliver logistics and humanitarian relief, move military equipment, supply combat forces, and forward position combat cargo around the world. MSC also assumes operational command of the Maritime Administration's (MARAD) Ready Reserve Force (RRF) ships during periods of activation. However, our organic sealift capabilities will degrade rapidly over the coming years if we fail to pursue a responsible recapitalization strategy. Although the Navy added service-life extension funding for 22 vessels in POM19, 30 of 65 Roll-on/Roll-off (RO/RO) vessels and all 11 special capability vessels could age out over the next 15 years. As further directed by the Fiscal Year 2018 National Defense Authorization Act (NDAA), USTRANSCOM is working with the Navy on a comprehensive recapitalization plan which includes acquiring used vessels, extending the service life of able vessels, and building new ships—all three of which are required to stabilize the fleet.

The 2018 NDAA authorizes the Secretary of Defense to purchase two used vessels. This provision was intended to serve as a bridging strategy within the recapitalization program but is insufficient to bridge the impending capacity gap. Based on the estimated build rate and size of newly constructed vessels, 24 additional "buy-used" authorizations are needed by 2030. Available capacity for used vessel acquisition presents a prime opportunity to pursue this strategy.

As a result of changes in market conditions within the maritime industry, USTRANSCOM will be the only remaining owner of steam ships in the United

States by 2020. We possess a sufficient number of certified steam engineers to operate this legacy vessel today. However, the pool of certified steam engineers will rapidly drop in number and proficiency as steam-powered commercial vessels leave service. Due to this diminishing capability, recapitalization of steamships with newer technology, such as diesel ships, is a high USTRANSCOM priority.

Opportunities to regularly exercise the organic Strategic Sealift Fleet ensures MSC maintains the highest state of readiness. Activating ships for exercises and sea trials is the primary mechanism for assessing RRF and MSC Surge Fleet readiness. These operations allow MSC and MARAD to better assess changes in material degradations, vessel and Mariner availability, and corresponding risk to mission accomplishment. However, in a fleet of 61 vessels, current resourcing only allows for 10 training activations per year. We regularly pursue additional opportunities to integrate our organic fleet into DOD-supported exercises and support unit-level missions, including participating in exercises with other CCMDs . We will continue to pursue means to increase activations and extend sea trials, where possible, to get these ships underway with more frequency and improve the overall readiness of the fleet.

An aging organic sealift fleet coupled with a reduction in U.S.-flagged vessels threatens our ability to meet national security requirements. The U.S.-flagged fleet has been in steady decline since World War II as a result of decreasing demand and the rising cost of the U.S.-flagged fleet compared to international fleets. In 1951, 1,288 U.S.-flagged ships were registered in the United States. In 1990, the fleet was down to 408 ships, and in 2013 just 106. Today, 82 U.S.-flagged ships operate in international trade, representing a 25 percent reduction in just the last 5 years. This reduction in actively trading U.S.-flagged vessels correlates to a decline in the numbers of qualified Merchant Mariners, the workforce required to deliver U.S. Forces to war. If the fleet continues to lose ships, a lengthy, mass deployment on the scale of Desert Shield/Desert Storm could eventually require U.S. Forces to rely on foreign-flagged ships for sustainment.

The U.S.-flagged commercial fleet is vital to the Joint Force's ability to accomplish its mission. USTRANSCOM's relationships with U.S.-flagged sealift partners are formalized through the Voluntary Intermodal Sealift Agreement (VISA) and the Maritime Security Program (MSP). Since their establishment in 1996, participation in these programs by privately-owned U.S.-flagged commercial shipping has proven a cost-effective means to assure access to sealift capability, capacity, and worldwide networks. The Merchant Marine Act of 1920, or the Jones Act, and the Cargo Preference Act are intended to ensure a baseline of ongoing business to support our inter-coastal shipping capacity and maintain a market for U.S. industrial shipyard infrastructure to build, repair, and overhaul U.S. vessels. However, the dwindling size of the domestic U.S. inter-coastal shipping fleet demands that we reassess our approach to ensure that the U.S. retains critical national security surge sealift capabilities. We also may need to rethink policies of the past in order to face an increasingly competitive future.

The MSP provides an intermodal and logistics capability outside of the DOD portfolio that would be cost prohibitive to replicate. MSP assures access to 60 militarily useful vessels, the mariners who crew those ships, and commercial carriers' global networks and infrastructure. Without this program, DOD's asymmetric advantage in logistics would be put at significant risk as many of the vessels currently in the program would reflag under foreign flags and no longer participate in VISA. In this scenario, DOD would be forced to augment organic capacity with foreign-flagged vessels to deploy and sustain the Joint Force. During Operation Desert Shield, 13 of 192 (7 percent) foreign-flagged vessels declined to enter the area of operations, while U.S.-flagged vessels provided steadfast support. Although the security environment today is more complex than it was 27 years ago, MSP remains a critical enabler in our ability to execute the National Defense Strategy (NDS), and it must continue to evolve. We are reviewing MSP this year to ensure the program's next evolution is best suited to support national defense.

Along with declining capacity, we are also concerned about the pool of current and qualified licensed Merchant Mariners who crew America's ships. If the international U.S.-flagged fleet continues to decline, the Merchant Mariner labor pool will also decline, putting at risk our ability to surge forces overseas and sustain a protracted conflict with U.S. Mariners. Although the qualified Mariner labor pool industry-wide is adequate to support a surge requirement today, a protracted need for Mariners would stress the labor pool beyond acceptable risk. The DOT, with DOD support, must seek innovative ways to recruit and retain sufficient Mariners to sustain sealift operations across the full spectrum of conflict. A healthy and viable U.S.-Flagged Fleet remains the foundation for a suitable Merchant Mariner pool.

Airlift/Air Refueling

USTRANSCOM's air mobility forces provide the Joint Force with a distinct advantage, projecting and sustaining immediate power in response to crises and contingencies around the world, any time the Nation calls. USTRANSCOM's Air Component, Air Mobility Command (AMC), provides airlift, air refueling, aeromedical evacuation, and air mobility support functions in support of all CCMDs by leveraging a team of Total Force Airmen and commercial partners. Although the air mobility enterprise stands ready to deliver an immediate force tonight, we must address several readiness concerns in our airlift and air refueling capabilities, as well as our patient movement system, to ensure we are able to meet our defense objectives in the future.

America's air refueling fleet is the most stressed of our air mobility forces. The combination of an aging fleet, increasing demand, and global tanker distribution puts a significant strain on this scarce national resource. At an average age of 61 years old, the KC–135 remains the workhorse, comprising 87 percent of the tanker force. Investments are necessary to allow the aircraft to continue to operate in a changing environment and stem the decline in aircraft availability. Nonetheless, as the fleet ages, sustainment costs and dwindling availability rates will eventually become untenable. The KC–10, which served as a key part of the tanker force for decades, is programmed for retirement in Fiscal Year 2019–2024. The current tanker requirement, set at 479, was based on the 2013 Mobility Requirements and Capabilities Study (MRCS). The 2018 NDAA-directed Mobility Requirements and Capabilities Study (MCRS–18) will reflect requirements articulated in the new National Defense Strategy and address the current and future levels of risk to the air refueling mission, which may drive the Department toward increasing air refueling capacity for CCMDs. However, we already know the convergence of an aging air refueling fleet with protracted KC–46 production puts the Joint Force's ability to effectively execute war plans at risk. Day-to-day, high levels of air refueling fleet utilization are approaching a point that challenges the Total Force to sustain current levels of support. Thus, the tanker fleet's end strength will require careful synchronization between KC–10 and KC–135 retirements and KC–46 production and delivery to sustain current force projection capabilities.

The uneven geographic allocation of the tanker fleet requires an agile command and control construct to balance this high-demand asset across GCCs. The practice of stockpiling resources in specific regions with no single organization possessing the capacity and authority to dynamically reallocate assets creates deficiencies in some theaters and surpluses in others. Global sourcing solutions, on the other hand, generate capacity out of multiple regions to support emerging crises in prioritized theaters.

To that end, the SECDEF directed USTRANSCOM, through the 2017 Global Force Management Allocation Plan (GFMAP), to manage in-theater air refueling assets that exceed the minimum required by Geographic Combatant Command (GCC) war plans. However, legislation enacted in 2011 reserves a disproportionate number of theater-assigned tankers for USPACOM and USEUCOM, limiting USTRANSCOM's ability to balance scarce resources against total requirements. Optimal allocation of assets requires a trans-regional perspective and the flexibility to manage mobility forces at an enterprise level. Given its global visibility, command and control resources, and geographic impartiality, USTRANSCOM is uniquely suited to manage the entirety of the tanker fleet. Relief from legislation that restricts changes to operational control of tanker forces in USPACOM and USEUCOM would allow USTRANSCOM to optimize the air refueling fleet and mitigate risk across the Joint Force.

The Operational Support Airlift (OSA)—Executive Airlift (EA) enterprise provides vital transportation for senior DOD and Federal officials, including the President, Vice President,

Secretary of Defense and Presidential Cabinet. The EA fleet remains a necessary asset, providing our senior military and government leaders with in-flight command, control, and communication capabilities as well as dedicated, secure transportation. Given its high-visibility and national level impacts, USTRANSCOM and the Joint Staff are reviewing options for long-term management and oversight of the EA enterprise.

The Air Force has made key investments in upgrading, modifying, and recapitalizing its airlift fleet, and we must stay the course. The last of 52 C–5M aircraft is scheduled for delivery in 2018 through the Reliability Enhancement and Re-Engineering Program (RERP). Similarly, advances in the C–17 fleet are enhancing its viability through the development of high altitude airdrop capabilities and improved secure communications for portions of the fleet. The Air Force also modernized the tactical airlift fleet through acquisition of new C–130J aircraft and various upgrades

to the Air Force Reserve Command and Air National Guard C–130H fleets. The health of the airlift fleet remains strong and continues to improve through these timely upgrade and modification efforts.

However, the growing pilot shortage challenges our ability to sustain current force projection levels. Roughly 30 percent of the Air Force's pilot shortages come from air mobility platforms. By fiscal year 2019, we project mobility manning shortfalls will reach or exceed about 650 pilots. A nearly insatiable demand for commercial pilots, coupled with a high OPTEMPO, is leading to a larger-than-expected number of pilots leaving the service. Last year, the Air Force took actions to mitigate the loss of experienced pilots and increase production of new pilots. We expect to see initial results from these efforts by fiscal year 2020.

Today, the mix of Active to Reserve Component resources in USTRANSCOM means the command relies on the Reserves and National Guard to fulfill war-time requirements. For example, more than 50 percent of AMC's airlift and air refueling assets are in the Reserve Component. The current force balance creates component command dependence on National Guard and Reserve units to volunteer for activation. Furthermore, for the past three decades, the Reserve Component has been used as a reliable and trustworthy asset to sustain day-to-day operational requirements, a function for which, historically, they were not resourced or structured. Funding increases in fiscal year 2018 and fiscal year 2019 will alleviate some of the strain on the force but the disproportionate force mix may still have broader implications across the department. The Department's vigilance is required to ensure the means support the ends against which the Services have aligned our Reserve Component.

Our Civil Reserve Air Fleet (CRAF) partners are critical to the success of our enterprise, and today, the CRAF program is healthy and fully subscribed to meet national security objectives. CRAF is a voluntary program by which U.S. air carriers are awarded government airlift business to assure access to commercial capacity during contingencies and emergencies. This resolute relationship has historically afforded our partners the opportunity to lift about 93 percent of all DOD passengers and 40 percent of DOD air cargo in direct support of our warfighters. As our 25 CRAF carriers remain in a steady state of readiness to support DOD cargo and passenger requirements, we are committed to maintaining a viable CRAF program to continue to meet national defense requirements.

Surface

When the Nation goes to war, American forces begin deployment operations using U.S. transportation infrastructure. USTRANSCOM relies on the DOT, along with other Federal and State agencies to ensure our roads, rails, and ports are capable of supporting the warfighter's deployment and distribution requirements. Our Army component command, SDDC, represents the interests of the DOD to access and safely use both private and public transportation infrastructure and services. Today, these networks are capable of effectively deploying the Joint Force. However, it is imperative that we remember that our transportation infrastructure is not merely a medium for commercial and civilian use, it is a national strategic asset, critical to moving military members, equipment, and supplies in times of crisis.

Highways and railways are strategic links that serve as routes for the DOD to deploy military forces from fort to port and to project warfighting materiel from factories to foxholes. Currently, public road networks are capable of meeting DOD ground transportation needs while providing adequate access to commercial trucking capacity to meet current and anticipated surface transportation requirements. America's rail networks rapidly move large quantities of heavy equipment from military installations to ports of embarkation, a capability that is critical to national security. SDDC collaborates closely with the DOT and the railroads to assess the suitability of our rail networks (most of which are privately owned) to continue to support military needs. Although rail networks remain adequate, we face age-mandated retirements of some of our uniquely capable, DOD-owned railcars. We are developing a plan, in close cooperation with the Department of the Army, to replace this critical deployment enabler.

The health of America's strategic sea ports are also of vital national interest. There are 23 designated Strategic Seaports along our coasts—17 commercial and 6 military—which serve as major springboards from which the Nation delivers diplomatic and military solutions around the world. The infrastructure of each of these ports, to include their cyber-enabled infrastructure, must be viable and resilient to allow the flow of equipment and cargo during times of conflict or distress.

Military Ocean Terminal Concord (MOTCO) on the West Coast and Military Ocean Terminal Sunny Point (MOTSU) on the East Coast are critical to DOD's ammunition distribution mission, and remain a top readiness priority. MOTCO, in par-

ticular, was identified as requiring increased investment due to aging infrastructure and lack of acceptable, ready alternatives to support ammo movement to the Pacific. The U.S. Army is in the process of a $300 million modernization program at MOTCO, to include construction of a new pier. We must continue to maintain and modernize both of these strategic seaports, as well as build capacity at other ports to enhance resilience, as their unique mission set underwrites the Joint Force's lethality.

Patient Movement

Today, USTRANSCOM operates the most robust patient movement system in the world, safely and efficiently moving America's ill and injured. Last summer, we completed our Aeromedical Evacuation Requirements Analysis to evaluate the number of aeromedical evacuation crews, Critical Care Air Transport teams, and patient movement equipment items required to move patients on time in a single scenario. Although we conduct patient movement without falter in the current operating environment, we found shortfalls in our ability to surge for large-scale conflict with mass casualties. We are currently working with the Air Force to determine the appropriate way ahead to mitigate these shortfalls.

Limitations on patient movement in a non-permissive context highlighted the need to develop interoperable, multi-modal solutions for joint casualty transportation. Current plans create a near dependence on airlift which may not be feasible to meet requirements depending on the scenario. Furthermore, as military medical facilities consolidate or close, the military infrastructure to support patient movement is increasingly strained. Insufficient access to en route medical care (transfer, staging, and treatment) at critical distribution nodes will further challenge our ability to safely move expected numbers and types of casualties in future conflicts. Additionally, a decrease in CONUS-based health care capacity in the National Disaster Medical System (NDMS) partnership will further complicate our ability to move patients to the care they need.

The combination of insufficient patient movement personnel, equipment, infrastructure, and capacity significantly decreases the likelihood that our Joint Warriors with survivable injuries and illnesses will have the same high survival rates we have seen in recent conflicts. In partnership with the Joint Staff, we initiated a capabilities based assessment which will be completed this year. We are also working with the Services, the Joint Staff, and the National Health Enterprise to address these challenges.

Cyber

Threats in the cyber domain pose the greatest threat to our decisive logistics advantage. The return of great-power competition is characterized by activities in the so-called "gray zone." In this new normal, both state and non-state actors conduct persistent probes and malicious cyber activities, seeking to erode the U.S. military advantage and alter existing international order. The logistics enterprise is more susceptible to these malicious activities than other military organizations based on our unique relationship with commercial partners. Although logistical and operational planning generally takes place on classified networks, ninety percent of military logistics and global movement operations executed on unclassified commercial networks. This challenge is exacerbated by the inadequacy of implementing existing cybersecurity standards and the fact that DOD's extensive cyber protections do not extend to industry, critical vulnerabilities in our cyber security posture. Defending DOD information on those commercial networks goes beyond the authority of a single combatant commander. Mission assurance, particularly in degraded and contested environments, requires a collaborative effort between the Department of Homeland Security, other national agencies, commercial industry, and the Nation's leading experts. We will not solve this problem alone.

In 2017, USTRANSCOM made strides toward hardening our overall cybersecurity posture in collaboration with commercial industry. We strengthened our partnerships through the National Defense Transportation Association (NDTA) with the inclusion of cybersecurity training programs for the entire enterprise. Moreover, several industry CEOs participated in our Cyber Roundtables, creating future options to improve national defense, incorporate commercial equities in the initial stages of contingency planning, and share information across domains. Learning from these venues, we began modifying existing Transportation Service Provider contracts to mandate compliance with the National Institute of Standards and Technology's (NIST) Special Publication 800–171, which governs the protection of covered defense information, including unclassified controlled technical information. Prior to this update, transportation contractors were not required to upgrade security systems or comply with threat reporting measures. We are beginning to implement contractual

language, which requires our industry partners to adhere to NIST standards commensurate with Defense Federal Acquisition Regulation System (DFARS) rules. This measure will protect information systems handling of comprehensive DOD transactional information. We are also embedding a contractual requirement for participants to perform self-assessments against NIST standards and submit a plan of action to USTRANSCOM to address deviations from the standard and non-compliance. USTRANSCOM may conduct an on-site visit or request a third-party assessment to review progress toward meeting action plans.

The completion of an initial Mission Assurance Assessment of the Joint Deployment Distribution Enterprise (JDDE) also offered insight on where we need to improve our cyber defenses. With the knowledge gained from this study, we are completing a more comprehensive, OSD-directed assessment of selected strategic seaports. We incorporated cyber events in multiple major exercises and learned it is impractical to defend everywhere, all the time. Instead, resiliency is key, not only in our cyber-enabled systems, but also in the operations that depend on those cyber-enabled systems. As demonstrated by Maersk's June 2017 NotPetya incident, one cyber incident has the potential to impact the entire enterprise.

To address these challenges, we must iteratively improve risk-reduction measures to include identifying and hardening security risks for National Key Cyber Terrain, developing and implementing cybersecurity standards, sharing information across agencies, conducting routine vulnerability assessments, mitigating insider threats, and developing contingency plans for significant cyber incidents. We need to link DOD and DHS cyber authorities across critical defense networks and develop procedures to share information with our fourth component as we all operate among the same threats. Finally, cybersecurity standards must advance beyond the minimum requirements and facilitate a collective framework to defend against competitors and adversaries. Our challenge is everyone's challenge.

Evolving for Tomorrow

USTRANSCOM delivers on behalf of the Nation and has done so successfully for 30 years. However, we must avoid complacency. We face a challenging future marked by growing uncertainty, risk, and complex demands. We have to be ready for any possible set of circumstances. With that reality in mind, the Command is focused on evolving to respond to the Nation's needs today, while simultaneously preparing for the future. In doing so, we continue to pursue opportunities in cyber and technology to modernize our systems and processes and ensure the enterprise remains ready and resilient across the spectrum of operations.

Transportation Management System (TMS)

The Joint Force's transportation requirements demand transparency, affordability, and asset visibility to preserve options in the current operating environment. Over the last three decades, USTRANSCOM developed technical solutions with the best available technology platforms at that time. As a result, the command now has a diverse set of programs that link movement requirements with available transportation assets across the enterprise. In 2015, USTRANSCOM identified 12 performance gaps in the current network structure that prevent the command from conducting integrated multi-modal operations. Most major manufacturers and distribution companies (e.g., Walmart and Amazon), use a Transportation Management System, a single platform for end-to-end shipment planning and execution, to increase return on investment. While the dollar may not be the bottom line for the DOD, a TMS promises to improve support to the warfighter and boost auditability.

In August 2017, the command initiated a proof-of-principle to determine the feasibility of implementing a TMS. This four-month proof of principle validated our assumptions on the capabilities and benefits of a TMS and confirmed its broad reaching value to the JDDE. TMS streamlines transportation and financial management processes, enhances enterprise-wide asset visibility and flexibility, and increases readiness. With plans for an enterprise-wide TMS, USTRANSCOM is forging ahead with implementation, beginning with a full-scale prototype. We are strengthening strategic partnerships with Defense Logistics Agency (DLA) and Pacific Command (PACOM), and inviting the Services, CCMDs, and other partners to a joint planning event early this year. These engagements will build universal acceptance and allow the enterprise to leverage the operational power of a TMS.

Cloud Computing

This year, USTRANSCOM is in the process of rapidly transitioning all our digital applications to cloud-based technology. Leveraging best-of-breed commercial technology allows us to control costs, enhances Mission Assurance, and improves our agility and network resiliency. Furthermore, the cloud allows our program managers, developers, and software engineers to keep pace with industry, and track, re-

view, and plan costs associated with IT projects, in real time. Economies of scale, standardization, and automation in cloud computing also promise to substantially reduce the cost of IT infrastructure. We anticipate completing this effort in the summer of 2018, to include secret level applications.

Pathfinding for the Department as its "Cloud Center of Excellence," the command is executing its migration, with about 25 percent of programs and applications already in the cloud. We are increasing security, access, and reliability while freeing resources and manpower to tackle our toughest cyber challenges. Most importantly, we are providing a production contract model and repeatable process for the entire Department to leverage. Establishing secure IT infrastructure for commercial industry must be a priority. USTRANSCOM is setting conditions for success for the rest of the DOD—we'll proudly continue to serve as the pathfinder for defense cloud-computing. Moving to the cloud not only improves security, it is also a key requirement in harnessing the power of data.

Building the "Data Lake"

Developments in the field of big data analytics suggest that transformative solutions to many of the most complex problems within the logistics enterprise are just over the horizon. Access to large data-sets and the interrelationship between them, along with tools to translate data into knowledge, will enable the enterprise to rapidly convert knowledge into action. We must have the proper tools to actually derive meaningful insight from data and subsequently, convert knowledge into action. Currently, the transportation enterprise uses data to inform daily transactional functions but fails to fully leverage big data and advanced analytics to inform logistics forecasting and rapid decision making. Last year, we partnered with Defense Innovation Unit Experimental, Defense Digital Services, and the Strategic Capabilities Office to build a roadmap for constructing the enterprise's "data lake" and take advantage of the power of living data for logistics.

Leveraging Emerging Technologies

Transitioning our systems to the cloud and building the data lake are the foundational steps to realizing the potential in future technologies like machine learning, artificial intelligence, and autonomy. When distribution requirements surge and operator shortages strain the distribution system, demands will eventually overcome capabilities. To mitigate these challenges and meet dispersed distribution requirements, industry is innovating a future of low technology and high volume, in contrast to our current high technology and low volume model of more advanced and expensive defense assets. This future is based on machine learning and artificial intelligence platforms that eclipse the human advantage. We are embedded with the OSD Artificial Intelligence Working Group to realize this technology and ensure we are maintaining pace with industry and rival nations. Focusing on these technologies will also allow the enterprise to pursue a future in autonomous systems—trucks that drive themselves, ships that can navigate oceans without human inputs, and wide-body aircraft that can land on their own.

Workforce Development

Meeting the challenges of our time and realizing the full potential in the opportunities ahead, demands an innovative, agile, and diverse workforce. These challenges are only increasing in complexity, and recruiting, developing, and retaining talent is more important than ever. At USTRANSCOM, we strive to cultivate a force that is agile enough to operate across GCC boundaries and adaptable enough to thrive in a complex and dynamic operating environment. To achieve this end, we undertook several initiatives within the past year to enhance our developmental opportunities and ensure we retain high-performing individuals. In an effort to broaden our workforce and expand partnerships, we instituted a civilian exchange with the Defense Logistics Agency (DLA) and National Geospatial-Intelligence Agency (NGA) through our civilian experiential development program. Through initiatives like this one, we intend to diversify thought and reinforce an already strong, collaborative relationship with our strategic partners. We are also developing robust strategic workforce planning initiatives that will help the Command identify and access the right talent needed to continue to meet national security mission imperatives. Among these workforce initiatives are adding data scientists, data analysts, data managers, and cyber professionals to the workforce, all critical to mission assurance in the future.

OUR COMMITMENT TO MEETING TOMORROW'S CHALLENGES

For 30 years, the Nation has turned to USTRANSCOM's strategic power projection capabilities to respond to global threats and disaster. We do not know what to-

morrow will hold, but the next year promises to be as busy and challenging as the last. The actions we take today to improve readiness, modernize the force, and assure our future capabilities have to be sufficient to ensure we remain the preeminent military power. USTRANSCOM will not get there alone. Together, We Deliver.

Senator INHOFE. Well, thank you very much. You will be happy to know that all of your corn guys are right down here to my right.

[Laughter.]

Senator INHOFE. I have two things I want to——

Senator DONNELLY. There is corn in Indiana too.

Senator INHOFE. That is right.

Senator WICKER. There is corn in Mississippi too.

Senator SHAHEEN. There is some corn in New Hampshire.

[Laughter.]

General MCDEW. We are okay with all of you.

Senator INHOFE. It is great to eat but not good in your gas tank.

[Laughter.]

Senator INHOFE. You really started something. Did you not, General?

You have said some things that I look at and I try to do the math and figure out how this is going to work as we get our aging fleet going. You made the statement, America's air fueling fleet is the most stressed of our air mobility forces.

Now, the KC–135 is 61 years old. They have quit making the C–5 and the C–17, and we are looking at the KC–46. That is great and it is going to be well maintained at Tinker, and I am very happy that that is going to come. However, they have ordered 179 of them.

I would like to have you kind of explain how this is going to work. You are going to see a phasing out. At the same time, it is going to take 10 years apparently to get to the 179, and then we have our KC–135, which will be at that time over 70 years old.

So I really have two questions on this. Do you think that the KC–46 will be delivered this year as projected and the impact on the current operations in maintaining the existing air fueling because of production delays of the KC–46? Do you believe the current inventory of C–17's and C–5's are sufficient to provide the necessary gap that we are looking at? How is the math going to work on that down the road?

General MCDEW. Well, Senator, that is a very insightful set of questions, and I will try to give as concise a set of answers as I can.

Believing whether or not the KC–46 will be delivered on time, I talked to the Chief of Staff of the Air Force yesterday. He has some concerns about the ability to deliver the airplane as projected but is committed to having the airplane that is delivered be operationally capable when it is. I believe Boeing and the Air Force are both trying to get to that point.

Your discussion about whether or not our fleet is of sufficient size—thank you for having us do another mobility capabilities requirements study because that will answer that question. All the studies we have had to this point have not included things like a contested environment, cyber, and some other things that we have discovered over the last few years that we really need to put a

focus on the mobility forces because no one before has believed that we are going to lose anything.

Senator INHOFE. I appreciate that, and we will look forward to getting that report.

Now, I do want to have time to get an answer to this one. It was just a month ago that Senators Ernst, Rounds, Sullivan, and myself were in the Pacific area. We were talking to our international partners in South Korea, Taiwan, Japan, and the Philippines. It kind of solidified my understanding of the expansionist activities of China and what they are doing. People do not realize they are actually creating these islands. There is not any legal justification in my mind for this, but it is being done. They are actually set up as if they were preparing for World War III, everything from runways, cannons. It is 100 percent military. They have got seven locations down there, and the seven outposts add up to over 3,000 acres. So it is a big deal over there and it has got a lot of attention. Then when you stop and realize where the seven outposts are in the Spratly Islands, they are located in international waters between Vietnam and the Philippines.

So I would like to get from you how concerned you are in terms of what this does to our seaways and our capability that you are going to have to be using.

General MCDEW. Senator, freedom of navigation and access to global ports is one of the most significant things I deal with on a regular basis, not just for me but for our partners and allies around the world, anybody that loves freedom and understands how important it is to the global economy.

Senator INHOFE. Yes, but in that particular area, though, it would seem to me that could be very obstructive in our ability to fulfill the missions that we have on those sea lanes. Apparently you do agree with that.

General MCDEW. Absolutely.

Senator INHOFE. Okay, good.

Senator Reed?

Senator REED. Well, thank you, Mr. Chairman.

General McDew, you indicate in your comments and my comments also that cyber is probably the number one challenge if you look at your responsibilities. Can you elaborate a bit about what you are doing? But also I am under the understanding—and correct me if I am inaccurate—that many of your contractors do not have adequate cyber protection—civilian contractors. In fact, there is even some notion that they are not required to report immediately when they detect breaches. Can you give us kind of an evaluation of not only what you are doing but the problems you have in your contractor force?

General MCDEW. Yes, Senator. So cyber is the number one threat to U.S. Transportation Command, but I believe it is the number one threat to the nation. The nation's problem is there is not a clear national cyber standard.

All of our contracts with our contractors include a cyber standard, a hygiene standard for our contractors. It doubles down on the requirement federally to report intrusions. But a greater problem is in our headquarters, cyber is the commander's business, but not

everywhere across our country is cyber a CEO's [Chief Executive Officer] business.

Senator REED. How are you doing in terms of compliance? You have teams that will go out and review a major contractor for either ships or planes, et cetera, and then require them to make corrections. Can you do that?

General MCDEW. We have the authority to go out and do inspections, but that is a relatively new one that we have not exercised yet. Across our civil reserve air fleet contractors, they get a regular inspection as part of their safety inspection, and we are trying to get that to be a regular part too with cyber.

Senator REED. Do you have the resources to do those types of intensive inspections?

General MCDEW. Not at the pace we probably would like to. But we also require that they have someone check on their security as well. The problem is I am not sure everybody understands how problematic it is.

Senator REED. Right. I think what you have said before is that unless it is a command priority—and in your shop, it is, but over in civilian shipping lines and aircraft, it is not so much a leader responsibility. It is there but it is not being fully enforced. Is that accurate?

General MCDEW. In some. Some are probably leading the nation in their ability to look at this problem set. But in our cyber roundtables, which is one of the things we are doing to raise our level of awareness, some of the CEO's chief security officers cannot even get to the see the board, they cannot even to see the CEO. So that is a problem.

Senator REED. Thank you.

We are trying to deal with that on the Banking Committee with requiring someone on the board to be a cyber expert. We are running into some trouble, but the SEC [Securities & Exchange Commission] should do that immediately without waiting for us.

Shifting gears, we gave you authority to buy two foreign ships as, we thought, a bridge to a longer-term plan. Now you are coming and asking for 24.

The first question that strikes me is can our American shipyards not produce these ships if they are given the design? Why do we have to go off and acquire so many foreign ships?

General MCDEW. Our American shipyards build some of the finest ships in the world. So that is not really a problem. It really comes down to how much money we want to spend and when we want to recapitalize this program.

So, first, thank you for the authority to buy two used ships. You know that I focus on the fact that they are used. Many of these ships were built in foreign yards. However, they are sailing for us today under the U.S. flag, and they have been converted to U.S.-flagged and they are U.S.-crewed ships. What we would like to be able to do is to get rid of the steam plants that I own. In 2020, I become the largest owner of steam plants in all of the maritime industry across the world. I do not want that title, Senator.

Senator REED. But we will look carefully at that request. Obviously, last year we were sensitive to your requirements for an immediate, quick fix and we did.

Another aspect here, which is I think very important, is that in your prepared statement, you point out that the medical evacuation system has some shortcomings that we have to respond to in terms of the ability to move injured personnel quickly to a suitable facility. Can you just quickly—I only have a few seconds—make a comment on that?

General MCDEW. The biggest part is that we have transitioned ourselves to thinking that we are no longer going to work in a permissive environment, that every environment will be contested. If that is the case, then it compounds every one of my missions that I have been given. The biggest part as well is that our medical infrastructure in the United States is not the same as it was in, say, 19—whatever. You want to pick the date. It started to atrophy. And so if we are going to move back hundreds of patients from the theater in a big war, our ability to scale and use American hospitals is not the same as it was, say, 20 years ago.

Senator REED. And you have alternative plans to cope with that situation?

General MCDEW. We are working with the national health agencies to try to come up with those alternative plans, but they are not as easy as you could imagine. If you start to think that we are going to lose more people in a potential big end fight and have to transport more people back, we do not have the military hospitals we once had and we do not have the civilian hospitals we once had.

Senator REED. Thank you very much, Mr. Chairman.

Thank you, General.

Senator INHOFE. Thank you, Senator Reed.

Senator Wicker?

Senator WICKER. Senator McDew, thank you for your service. General McDew.

[Laughter.]

General MCDEW. I could not do your job.

Senator WICKER. Well, we could not do yours.

But let me ask you to follow up on this question that Senator Reed asked. Of these 22 ships, you are asking for 22 more—24 used ships. Where were they manufactured? I guess you have not identified them.

General MCDEW. All those ships have not been identified yet.

Senator WICKER. But typically they would have been manufactured other than in the United States.

General MCDEW. Most of them.

Senator WICKER. Would all of these be currently U.S.-flagged ships?

General MCDEW. The ones we would target would be U.S.-flagged ships that are sailing for us—many of them—in the maritime security program that a company might shuttle after 20 years of life. That cuts my fleet's age in half overnight. They are pennies on the dollar right now on the open market.

Senator WICKER. What is their life expectancy after you would purchase them? These two that you are already in the process of acquiring and the other 24.

General MCDEW. We would probably end up using those ships for another 20 to 30 years. And so you are talking about a ship you can purchase right now from $20 million to $30 million on the open

market that you would use for another 20–30 years versus buying a new ship, which is the ultimate goal is to build ships in the U.S. yards that would be built new but maybe cost $850 million a ship. It would take a while to recapitalize.

Senator WICKER. Now, do you support the Jones Act and the Cargo Preference Act as being vital to national security?

General MCDEW. I do, Senator, but for a number of different reasons. My primary focus is on national security and the capacity that I need to take this nation to war. It is our asymmetric advantage to deliver a decisive force in the maritime domain. The rheostats I have to effect that balance right now is helped by the Jones Act and Cargo Preference because being able to get more mariners to work allows us to have the capacity we need to go to war. If there were other rheostats—and currently there are not—maybe we could use those, but those are the ones I have to use.

Senator WICKER. What has happened in a year to cause you to go from a request of two ships to 24?

General MCDEW. The fact that my request was larger last year. I am happy to get the two that I got. We have a requirement to try to recapitalize about 26 steam plants. So two is the beginning to try to get to 26. We will not have a brand new ship built that I understand in the Navy's recap plan till about 2030. Between now and then, I am going to age out some ships.

Senator WICKER. What does the 25 percent reduction in U.S.-flagged ships do to our labor pool? What help do you need from this committee and this Congress in that regard, sir?

General MCDEW. The labor pool—we are approximately a couple thousand mariners short of the need that we have—we think we will have in the early days of a conflict. That labor pool is the true heroes of our national defense. Those mariners who went to war in World War II and lost at the highest rate of any single population are the ones I believe that will be with us in the next big conflict. An incentive to keep those people going to sea is the kind of help we need.

Senator WICKER. Well, okay, but part of that is having the ships for them to serve on.

General MCDEW. The cargo for them to put on a ship. We have got to be able to also decide as a nation is this country still a maritime nation. I believe it is.

Senator WICKER. I believe it ought to be.

General MCDEW. However, we have a hard time right now finding the evidence in our policies and laws that would be able to convince us.

Senator WICKER. One other quick point just for you to emphasize. I notice on page 15 and 16, you talk about the nation's infrastructure, and you make the point that an infrastructure program is great for commerce and great for transportation domestically but it is also very much part of your national security program.

General MCDEW. A strong U.S. economy, a strong U.S. infrastructure, and a strong industrial base—and I am not talking about the defense industrial base. Those are the people that make our exquisite widgets. I am talking the industry base in this country that does things for us. It is the military that we have today that heavily relies upon those and the infrastructure they ride on.

Senator WICKER. Specifically you have a concern going forward about our nation's rail system being up to speed in terms of what the military is going to need to transport on rail going forward.

General MCDEW. Our rail companies do a very nice job because they actually work on that infrastructure. So it is probably the best shape of our infrastructure. The concerns I have are in the cyber domain when it comes to rail. Cyber defenses—we have got to continually look at it. I would imagine that every one of our potential adversaries understands our vulnerabilities in rail.

Senator WICKER. Thank you. I apologize for calling you a Senator.

General MCDEW. I am actually flattered but I cannot do your job.

Senator WICKER. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Wicker.

Senator Shaheen?

Senator SHAHEEN. Thank you, Mr. Chairman.

Well, General McDew, thank you very much for your service and for being here today.

I want to follow up on some of the cyber issues that have been raised already in your testimony and by others. Have there been any changes to how TRANSCOM writes its contracts with private providers or commercial partners to address cyber issues?

General MCDEW. Absolutely. I am quite proud of our acquisition professionals. When we had our cyber contested war game, the first in the history of the command after 30 years of existence—we have since had two. When cyber came at the top of that list of things we ought to be considering, we put cyber standards in every one of our contracts. They are not as stringent as we want them to be, but we are trying to work with industry to bring them along because if we push them too fast and too hard without the help of Congress and the national standard, I am not sure they will stick with us.

Senator SHAHEEN. Are those standards that have been developed by TRANSCOM? Are they DOD standards? Are they reflected across the Federal Government? Do you know the answer to that?

General MCDEW. The standard is a NIST [National Institute of Standards and Technology] standard. It is a NIST–800 standard we have adopted.

Senator SHAHEEN. Great. Is that consistent with what the rest of DOD is doing? Do you know?

General MCDEW. I cannot say that all of DOD in all of their contracts has that standard in there.

Senator SHAHEEN. But it is probably something we should strive for.

General MCDEW. There should be a standard across the nation in the Federal Government of how we are dealing with cyber.

Senator SHAHEEN. One of the things you mentioned in your testimony last year was that you believed we need a cyber-related—you called it—bridging of the gap between DOD and the rest of the Federal Government. Have you seen any progress on that, and can you enunciate what that is?

General MCDEW. I have not seen as much progress as I would have liked to have seen. However, there has been incremental progress. U.S. Cyber Command and DHS [Department of Home-

land Security], the two entities that are responsible for each side of the gap, are completely coordinating and involved. I sit in the middle of that gap in a lot of areas that we do not focus on. I go back to the defense industrial base. Everybody is focused on the defense industrial base. Not everybody is focused on all of industry. I deal with a lot of mom and pop organizations, single owners, the folks that make our country run. They do not have the help and the cyber technical expertise to do what they need to do.

Senator SHAHEEN. So when there is a question about who is complying and who is not, who is in charge of that? One of the concerns that I have is that we do not have a singular person or entity who is responsible for cyber throughout the Federal Government.

General MCDEW. So on the civil side, .com, .gov, it would be DHS. On the .mil side, it is U.S. Cyber Command.

Senator SHAHEEN. If there is a difference for some reason around an issue, who resolves that?

General MCDEW. I would imagine that it would have to go to a cabinet-level discussion because the Cyber Command commander is a COCOM [combatant command]—well, about to become a COCOM—just like me. So he cannot argue with the Department of Homeland Security.

Senator SHAHEEN. It is my understanding that there have been some issues with the European Deterrence Initiative and movement of personnel and equipment around Europe. Can you describe what those challenges have been and what we need to do to address them?

General MCDEW. I believe that U.S. European Command [EUCOM] and our NATO [North Atlantic Treaty Organization] allies have done a very nice job of illuminating some things that we have lost track of over the last few decades. When we had 300,000 soldiers on the European continent, we had a better understanding and relationship with the multiple countries that would be involved, the border crossing issues, and all of those things that you just routinely dealt with because you had a lot of people there. Now we are facing some atrophy in that understanding. We have been seeing changes in how the Europeans themselves deal with transportation across the continent. So all of that is compelled us to say that we need to put more focus in that area, and EUCOM is doing a nice job of that.

Senator SHAHEEN. So the issue has not been so much the transportation capacity. It has been around the coordination of how we move people and equipment?

General MCDEW. A little bit of both. So many of the things that used to be government-owned are contracted out in Europe, as well as in our country. So you have got multiple contractors now where it might have been a government-owned entity before at some point. You have got different rail gauges in one side of Europe to another. All of those things are a bit more complicated because we do not have the forces in the theater that actually just make that much smoother.

Senator SHAHEEN. How important have our allies been in helping us address some of those issues?

General MCDEW. One of the reasons that we are as good as we are is we have some wonderful allies in some wonderful places. We

have got to continue, as the National Security Strategy says, by, with, and through our allies and partners, and they have been exceptional.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Shaheen.

Senator Rounds?

Senator ROUNDS. Thank you, Mr. Chairman. I would like to thank the chairman for bringing up the importance of corn as a food source and also recognizing the availability of our farmers to produce enough to not only produce food but energy as well. It does a great thing when it comes to the petroleum produced in your State because when added to petroleum, it actually improves petroleum. So I appreciate the opportunity to bring that up again today, Mr. Chairman.

General McDew, first of all, thank you for your service. I most certainly appreciated the time that you spent with us ensuring some of the concerns that you have expressed here today publicly. Let me just work through a couple of items that I think I would like to flesh out just a little bit.

We have heard from GAO [Government Accountability Office] and others that decisions about transportation infrastructure such as ports and equipment have struggled because of the lack of prioritization by the services and the lack of visibility to TRANSCOM and the larger community of transportation professionals where they may be existing issues.

To your knowledge, is DOD working to establish some sort of internal capability to expose capability gaps and funding needs for transportation infrastructure?

General MCDEW. Senator, DOD is working on and continues to work every year on prioritizing how we spend our money to get the best use of every taxpayer dollar that we get. We have been very blessed to get the amount of money we have gotten particularly for the next couple years of a budget cycle. But when the services go and decide that they have to—and they balance their budget every year. But when they balance it under constraint and the fact that it is not always delivered on time, that means that a service chief and the service secretary has to make a decision on what priorities get funded. When they make those, sometimes logistics falls at the end and the bottom of that priority list.

I fully understand having to have a kinetic effect, but I am parochially interested in the fact that our ability to project that power is what makes us the world's last super power.

I think the priorities that are established are as about as good as they can get. What I would like to get is more emphasis on kinetic. Also it has to have projection.

Senator ROUNDS. I think I was fortunate to accompany the chairman on a CODEL [Congressional Delegation] earlier this year where we went into the Pacific region. Clearly, the distances there are critical. As we have said, if we have to fight a war, we want to do it away from our shores. We fight away. We do not fight at home. That means that in order to get there, we have got to have your operation be as successful as possible. It has got to be efficient, and it has got to have the means to not only get people there

and get them home safely but to resupply them while they are there as well.

I am just curious. You have talked about cyber and about the need to continually improve the cybersecurity that we have got right now.

There has been a little discussion today about where you believe we are at today. Can you share how serious the cyber threat is to your command? Can you give us some examples in this open setting about how serious the threats are that are out there today?

General MCDEW. Senator, I believe it is serious enough for me to challenge one thing you just said, and I try not to challenge a Senator in public testimony. But you talked about us fighting away games versus fighting on our home field. I believe in the cyber domain we are fighting on our home field right now. That is how serious I think it is. I believe every single day in both the information space and the cyber space, we are fighting right now, and our contested environment is actually inside the continental United States.

Senator ROUNDS. I think that is well taken, and I would agree with you. But I think sometimes we have a tough time publicly being able to discuss how serious that threat is. Assuming that we are actually fighting it right now at home, is this something that happens once in a while? Is this something that happens occasionally? Is this a case of where you are concerned about somebody checking to see whether or not they can get into your plans? Or how deep is the threat? Just for the public, how deep is the threat to our ability to actually wage war and keep the kinetic war off of our home borders?

General MCDEW. The American public needs to understand how advanced the cyber threat has become, so advanced that an adversary can every day—and I believe that every single day across this country an adversary or potential adversary is probing us to see how we operate, where our most important data resides, and what triggers they can use to stay short of armed conflict. Nobody right now wants to take on the United States military head to head. So why would they?

Senator ROUNDS. One last thought, Mr. Chairman, if I could. The point I guess I would make is this just is not the peer adversaries looking at our military operations. They are looking at the soft underbelly, which is our non-defense but critically important resources that we rely on to move our men and women and our equipment from our shores to any place in the world. It is the civilian side that they are also looking at as well.

General MCDEW. Absolutely. I would like to point to the fact that we have a National Security Strategy. Many people believe that it is actually a national DOD strategy. It is the nation that most of our big adversaries and small adversaries will try to attack. I do not think they will actually try to go after, say, a United States Pacific Command [PACOM] or a European Command when they could easily get into the United States of America.

Senator ROUNDS. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Rounds.

Senator King?

Senator KING. Thank you, Mr. Chairman.

First, General, by the power vested in me, I want to bestow upon you the rank of honorary Maine citizen. I know that you started your career I believe and not only that in Aroostook County, which is a particular honor. I want to acknowledge that and delighted to have you here today.

I consider your command one of the most important, if not the most important, in all of the commands that we have because without you, none of the combatant commands can function. On July 2nd, 1863, the 15th Alabama was charged with coming up Little Round Top and dislodging the 20th Maine. Joshua Chamberlain gets a great deal of the credit and should for the leadership that day that he displayed. But a key element in that engagement was that the Alabamans did not have water. Their canteens were empty. They had marched 20 miles on a very hot day, and the fact that they did not have water and were exhausted was a factor in what happened, which turned American history at that moment. I think it exemplifies how important what you do is—it does not get the headlines or the credit, but what you are doing in supplying both people and materiel is so critical.

Here is one of the things that concerns me. A great deal of your capability is in the private sector, and you are given the responsibility without full authority because you cannot tell Delta Airlines or a shipping line exactly what to do. Do you feel that we are sufficiently wedded, that the contracts are strong enough that the responsibilities are being met in the private sector that will allow you to meet your obligations in a time of conflict?

General MCDEW. First, Senator, I duly accept the honor of being an honorary Maine citizen. My daughter was born in Maine in Aroostook County in lovely downtown Limestone. She has a 007 Social Security number, which I just gave out some PII [Personal Identifying Information] on her.

[Laughter.]

General MCDEW. But that double 0 means a lot to us, and we spent 5 and a half years and six lovely winters in upper Maine.

Logistics, as you said—and the folks that are watching this back in the cornfields of Illinois are quite proud of the fact that we do things for other people and we take great pride in it. It is like oxygen. When you have it, you do not think about it; when you do not have it, it is all you can think about.

The contracts are not as strong as I would like them to be. I do not believe that all of our vendors across the country fully understand the threat they are under, nor do they have necessarily the capabilities. We are trying to strengthen our contracts through relationships and bringing our commercial partners along with us. I call them my fourth component. I am just as interested in their readiness and their viability as I am the other military components I have. So we try to bring them along with us and educate them as well.

Senator KING. I hope that you will be very tough on your partners in these situations because my sense is from dozens of hearings here both in this committee and others that the private sector is not fully cognizant of the threat that they are under, and we do not want to find that out in a time of crisis.

The other thing that has changed in your situation is that we have been operating essentially in an uncontested environment for 2 or 3 decades. I understand you did a war game, a contested environment war game, recently. Insofar as you can share in this setting what you learned from that because now the whole National Defense Strategy is shifting toward peer competitors, and how does this play out in your strategy and capabilities?

General MCDEW. Our big revelation, Senator, was that cyber is in fact a bigger problem than we had thought before and that we had to do some things to secure our networks better, which they are pretty secure, but also provide ourselves a level of resilience.

The biggest takeaway for me as a warfighting combatant commander is the fact that all of our exercises to this point had assumed no loss of any logistics capability, like the enemy would not target it and so we did not have to think about it. Some of the numbers that were relied on to say this is the requirement assumed no attrition of the force. Attrition is everything from kinetic effects to the lack of maintenance and reliability.

Senator KING. But if we are dealing with a peer competitor who has submarines and underwater drones and aircraft, that is a whole different calculation.

General MCDEW. It is and it is generational. So go back to World War II. We had that lesson learned. We have forgotten it.

Senator KING. I take it that we are now trying to play catch-up in terms of our capabilities to operate in a contested environment.

General MCDEW. We are actually trying to catch up on what this new contested environment looks like. Before, we always thought we were in either peace or war, and the gap between the two is about the gap between my hands now. We now realize there is a bigger gap in that space. What is in that space is the difference between being at peace one day and the nation deciding to go to war. The last time we decided to go to war as a nation and the entire nation was behind it was 1942 in Romania. That space in the middle is not an easy space to live in, and we live in it every day and it is contested.

Senator KING. Thank you, General. Thank you again for the work that you are doing. I know that we are very cognizant of how important it is. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator King.

Senator Warren?

Senator WARREN. Thank you, Mr. Chairman.

Thank you, General McDew, for your service, for your hard work here.

The U.S. military is one of the largest consumers of fuel, and TRANSCOM's operations in particular are highly fuel-dependent. According to the U.S. Information Administration, the price of crude oil has been on the rise for more than 2 years now.

So let me ask, General, what impact does the rising price of fuel have on TRANSCOM's budget?

General MCDEW. Obviously, amongst the large consumers of fuel, we are the largest, I believe, in the Department of Defense. So every time the price of fuel goes up, that increases the amount of money we must spend to do our operation.

Senator WARREN. Right. I take it it is large enough that it has a real impact on your budget. That is what I am really asking.

General MCDEW. It does. I am also blessed enough to have a budget that is a little different than everybody else's. However, the services' budgets are the ones that are more directly impacted.

Senator WARREN. So in your prepared testimony, you discuss the current stress on our logistics fleet, both air and sea. DOD has been working for years on efforts to reduce fuel consumption and incorporate alternate fuels. In my home State of Massachusetts, for example, the Army scientists at the Natick Laboratory have been experimenting with new, more energy efficient shelters in base camps with a goal of reducing fuel demand for the deployed Army by about 25 percent. Would a 25 percent reduction in fuel consumption by our deployed forces help mitigate some of the stress on your command and the Defense Logistics Agency?

General MCDEW. Yes, Senator, it would.

Senator WARREN. So that would be a helpful direction. Good.

You know, we know that transporting fuel to our forward deployed forces in combat zones is expensive and dangerous even when we have full control of the skies and the shipping lanes. But as Senator Inhofe said earlier, that is not guaranteed in the future.

The new defense strategy says that DOD must be prepared to fight a high-end adversary. That guidance applies not only to the tip of the spear but also to your ability to supply the logistics chain our deployed servicemembers rely on over time.

So let me ask this one, General. Would it be challenging for TRANSCOM and the Defense Logistics Agency to refuel assets and meet deployed energy needs in an environment where we did not have air or sea supremacy?

General MCDEW. Everything gets more challenged when we do not have domain dominance. That is air, land, sea, and cyber and space.

Senator WARREN. Thank you.

Reducing use of our fuel and exploring renewable alternatives is not just about the environment. It improves mission effectiveness and it saves money that we can use to reinvest in the kinds of capabilities that you need. In a future combat situation like the ones the defense strategy describes, it is going to be an operational necessity. I think we need to get ahead of this now while we can. If we wait until our resupply lines are under threat, it is going to be too late.

So I appreciate your good work in this area, General. Thank you.

General MCDEW. Senator, if I can just add one more thing.

Senator WARREN. Please.

General MCDEW. The fact that cyber is such a warfighting domain now, we are under threat right now.

Senator WARREN. A fair point. So all the more about the urgency of this moment, and we have got to make these changes. Thank you. Thank you, General.

Thank you, Mr. Chairman.

Senator WARREN. Thank you, Senator Warren.

Senator Hirono?

Senator HIRONO. Thank you, Mr. Chairman.

Nice to see you again, General. Thank you for your work.

You mentioned that the cyber threat is one of your major concerns and that the contested environment is inside the U.S. You also said that our adversaries will not go after PACOM or European Command but that they would get into the U.S. Can you talk a little bit more about what you mean by they are going to get inside the U.S. and what can we do to counter them getting inside the U.S., as you put it?

General MCDEW. I probably misspoke, Senator. A potential adversary will always fight head on with the fighting force. However, what we have been seeing over time is that the information warfare space and the cyber warfare space does not have the geographic boundaries that we once thought of. So PACOM geographic boundary or CENTCOM [Central Command] geographic boundary is not as interesting to a cyber or an information warfare officer. So they will go to where they can go. So the United States of America, without a strong cyber standard or without us debating the information warfare space, means that it is a potential target for a potential adversary.

Senator HIRONO. So can you give a concrete example of the kind of vulnerability that we have? You mentioned that we have a National Security Strategy, which should include a cyber strategy, but are you saying that it is not implemented? It is not robust enough for your comfort?

General MCDEW. No, it is really not.

I visited Estonia last fall. Estonia in 2007 was taken down by a cyber threat, took to their knees, and they changed their entire perspective as a country on what the cyber threat means to them and their survival as a country. And so they put coding in elementary schools because they thought the threat was significant enough.

I am not sure if we have gotten to a point that we believe that something that we can do as a nation would strengthen our ability to protect ourselves from this new threat. It is a new threat. And so the specifics would be I may be a bit paranoid, but when I see an airline company's reservation system go down, I do not immediately think that it is just a problem part. I think is that an actor potentially probing. If I see a rail switch not work, I also want to make sure that it is not a cyber problem, and it could be just mechanical. But we have all got to think about how do we protect ourselves ahead of the investigation after a problem happens.

Senator HIRONO. So what I get from your response is that we certainly are not prepared as a nation to counter effectively all of the different ways that particularly our infrastructure can be vulnerable to cyber attacks. This is why we have a Cyber Command [CYBERCOM], and there is a lot of emphasis in this committee, as well as other committees, on our cyber vulnerabilities. I can see where we need more. What I would like to see is more of a whole-of-government kind of approach to what we can do regarding the cyber issue, and I do not think we have that.

In your testimony, you stated that the maritime security program provides an intermodal logistic capability outside of the DOD portfolio that would be too expensive to replicate. Can you describe the challenge as to the TRANSCOM mission if you did not have this program?

General MCDEW. So the maritime security program provides about 60 U.S.-flagged ships with U.S. mariners on board to do our needs and to potentially take this nation to war. Without that stipend paid to those companies, I believe that many of them might cease to exist as U.S.-flagged companies, and that has been something we have been doing for a number of years to assure that access to that capability and capacity.

Senator HIRONO. You also indicated the number of U.S.-flagged ships are also decreasing, have decreased over time, and that you also have concerns about whether we have a labor pool of U.S. personnel that can staff these ships. So this is a double-edged problem, and what are we doing to counter these problems?

General MCDEW. Similar to the CYBERCOM issue that you brought up—so USCYBERCOM cannot defend the entire nation. It does not have the authorities to do so. I personally cannot change all the things that need to probably be changed. I am not sure where the young men and women who grew up in my day who wanted to be mariners and truckers and pilots are because we are seeing a decline in a lot of those. I am not sure what all of the forces that are in play to have 1,288 ships flying the U.S. flag in 1950 dwindle down to 88 ships today. I am not sure of all the forces. But the MSP [Maritime Security Program] program allows 60 of them to keep their U.S. flag and to stay with us.

Senator HIRONO. Mr. Chairman, if I could just ask one follow-up question. Is it your preference that you have access to U.S.-flagged U.S.-crewed ships as opposed to, at some point, having to resort to internationally owned ships?

General MCDEW. It is not a decision that I made. It is a decision the country made that we will move our U.S. forces on U.S.-flagged and U.S.-built ships—U.S.-flagged ships. If the nation wants to change that, that is a debate the nation can have, but I right now will comply with what I am told to do.

Senator HIRONO. Well, as a strong supporter of the Jones Act, that is kind of where we should be, I would say.

Thank you very much.

Senator INHOFE. Thank you, Senator Hirono.

Senator Scott?

Senator SCOTT. Thank you, Mr. Chairman.

General, good morning. Thank you for being before the committee.

In your last war games exercise, what vulnerabilities were exposed that we should think about addressing, and in what order would you address those exposures?

General MCDEW. It was a grand flash of the obvious after we did it. The importance of doing it was it identified several areas that we need to focus on internal to U.S. Transportation Command and I would say possibly across the nation because our problems are actually not just our problems. They are actually national problems.

The first and foremost is cyber. Cyber is, I believe, the challenge of our time. It is the one that will define this period of time in our history more than just about any other challenge, and it brings potentially the fight that we would have on other people's shores—it brings it here.

The other for us is attrition. The fact that logistics capabilities and mobility capabilities have not been counted on to attrit in a fight is something that we cannot probably have as a reality going forward.

Mobilization. Just about every option I give to the nation today requires me to mobilize the Reserve and Guard. I do not think we formulated them, resourced them to be the operational force that they have become over the last 3 decades.

That is just a few of those things, Senator.

Senator SCOTT. Let us take a little more time on the cyber exposure. I understand that 90 percent of your command's mission takes place over unclassified communication networks. I think you said in your written statement establishing secure IT [information technology] infrastructure for our commercial industry must be a priority.

Can you walk me through the complex exposures and vulnerabilities that you have when 90 percent of it happens in a commercial environment?

General MCDEW. Senator, what I have been learning over time is there are many companies out there who understand how vulnerable they are in the cyber space. Because I bridge the gap between the authorities that are invested in U.S. Cyber Command and the authorities inherent in the Department of Homeland Security to protect respectively the .com and .mil different domains—because I live in that space, we have had a series of cyber roundtables as a result of our contested environment war game where we are inviting academics, commercial industry, and some hackers to help us understand the problem better. In one of those roundtables in one of the panels, a series of security officers in corporate America said that they cannot get in to see the board or can they get in to see the CEO to talk about the problem. That is not every company, but it is at least a few that do not understand the severity of the problem. Even if they understand it intellectually, they may not have all the tools required to fully understand the sophistication of today's threat.

Senator SCOTT. On the attrition aspect, there is a likelihood that during transportation you lose something. Is that pretty simple?

General MCDEW. I think that is pretty simply stated and quite true.

Senator SCOTT. On the mobilization, can you expound upon that for a minute?

General MCDEW. Absolutely. So when I was a youngster 150 years ago coming in to fly airplanes for the very first time, the majority—and I will use one example and it can apply to all of the logistics force. The KC–135 was heavily invested in the active duty. Strategic Air Command existed. And so 80 percent of those airplanes were in active duty units. Transition to today, and about 60 to 65 percent of that is now in the Guard or Reserve. It has nothing to do about my trust and confidence in their ability to do the mission. It has everything to do with how available they are.

With all of that shift in the Guard and Reserve, a high-end fight says we must mobilize. If our history says that we would immediately decide to go to war, immediately decide to mobilize, that is fine. If history shows that we will live in this space between peace

and war for a period of time, I am worried that I will have access to those folks that I need when I need them.

Senator SCOTT. Chances are pretty high we are going to live in that purgatory for a lot longer than we are comfortable. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Scott.

Senator Sullivan?

Senator SULLIVAN. Thank you, Mr. Chairman.

General, good to see you, and thanks for all you are doing.

I just want to ask you a very—just off the top—your command does so much and it is so critical to the warfighter, to any kind of military operation. I think it is unsung in many ways how much work you do and how we cannot function as a U.S. military without you operating effectively, efficiently. What is the top issue that keeps you up at night right now, General, and the biggest challenge?

General MCDEW. Well, first, let me thank you for acknowledging the great men and women who live in the cornfields of Illinois who are watching you right now in watch parties all across the command.

Senator SULLIVAN. They do a great job, and I think they are unsung.

General MCDEW. Then you just pumped me up because all of my self-esteem is derived from how good they are because I do not actually do much anymore.

Our number one threat, Senator, is cyber and how well we are able to protect ourselves and protect my fourth component, which is commercial industry, in the cyber domain.

Senator SULLIVAN. And so you have some control over the cyber domain as it relates to the military, but it is much less control in the commercial realm. Is that not correct?

General MCDEW. I have no personal control in the cyber domain in the military. U.S. Cyber Command does and they do an effective job of that. I have zero control except through contracting mechanisms with the commercial industry.

Senator SULLIVAN. I want to ask a question relating to the great State of Alaska. You know, with the National Defense Strategy out, which I strongly support the kind of shift in focus—I think most Senators do, by the way—to kind of a great power competition and some of our national security challenges, whether it is Russia, North Korea, China. My State actually happens to be close to all of those countries. And as you know, we are the hub air combat power for the Asia-Pacific and the Arctic with soon to have over 100 fifth generation fighters based in Alaska, and all the C–17's and C–130's and F–16's and a whole host of important military assets, including expeditionary forces that can get to North Korea or the Korean Peninsula or anywhere else in a moment's notice.

I know that you—and I have talked to the Secretary of the Air Force and General Goldfein a lot about this—are looking soon at the OCONUS [outside the continental United States] decision with regard to KC–46's and the tanker refueling deployments. I have been trying to make the case that it makes a lot of strategic sense not just because of the assets that are in there but every airplane

that flies over the Asia-Pacific from the Lower 48 actually flies over Alaska.

Can you give us a sense of where we are in the OCONUS KC–46 deployments and give me assurances that Alaska's strategic location—as you know, Billy Mitchell, the father of the Air Force, called it the most strategic place in the world—is in strong consideration for those OCONUS deployments?

General MCDEW. I will acknowledge that Alaska is strategically important. Although I wear this wonderful blue uniform and I am an airman and have been a proud airman for 35, nearly 36 years, I am not currently in the Air Force right now. So I cannot talk to you about the choices the Secretary of the Air Force and the Chief of Staff of the Air Force made about the actual basing of those assets.

The thing I would like to highlight, though, is as the combatant commander who has combatant command authority over those assets in a war fight, our ability to set, balance, and use the globe entirely is going to be important.

Senator SULLIVAN. Thank you.

One final question, General. I am sorry I missed my colleague, Senator Scott's question but I think it relates to that. But on the integration of Reserves and Guard and active forces with regard to your command, how important is that, and how important is it that we continue to make sure that our Reserve and Guard components are fully trained, fully funded, fully resourced to make sure that when called upon they can do the mission that is so important to your command?

General MCDEW. My command would cease to exist and operate the way it does today without the Reserve component. A good portion of my force is in the Reserve component across all the services, and my Army component—I am not sure of the percentage, but the plurality is in the Reserve component. The air component—the majority is in the Reserve component. I am very interested in both their readiness and training and resourcing, and it is not the way it should be based on how often we will use them and how much we will be able to rely on them.

Senator SULLIVAN. Do continuing resolutions [CRs] help or hurt the readiness of those forces?

General MCDEW. CR's are probably the most disastrous thing that we could have happen to a military force that is trying to, one, recapitalize and maintain a level of readiness to fight today's high-end fight.

Senator SULLIVAN. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Sullivan.

Senator Blumenthal?

Senator BLUMENTHAL. Thanks, Mr. Chairman.

Welcome and thank you for your service.

As you know, the United States has continued to reassure our partners in Europe, our NATO allies, of America's dedication to that region in the face of Russia's continuing belligerent and aggressive actions. TRANSCOM continues to support the services of our presence in Europe, including aircraft, tanks, personnel, so that we do joint exercises and we demonstrate a joint resolve.

I would like to know what capabilities Russia has to interfere with our logistics pipeline in Europe. Should we be more concerned about the physical obstruction and manipulation that Russia can present, the potential destruction of our pipeline, including the cyber realm but in other domains as well?

General MCDEW. Senator, because our contested environment war game allowed us to see more clearly the problem set and how contested the world is, we see access as being one of those areas in the physical domain. If we look around the globe and particularly the European continent, we are going to have to be able to use as many ports of entry, as many lines of communication as possible if we were to find ourselves in a potential fight in that theater. All of those are not as assured as they once were, say, 20–30 years ago. So Russia has levers of influence in that domain that we probably have not considered for a number of decades.

Senator BLUMENTHAL. As you know—and I think you made reference to it—compared to the 300,000 troops in the Cold War, we have about 64,000 now. They could be used in crisis. The European Union is also seeking to build European defense capabilities. Do you think that Europe is contributing or doing enough?

General MCDEW. There are several ways to go down this path, and I am going to choose one. One is I have great faith and confidence that one of the reasons that America is as respected as we are around the globe is our partnerships and allies. The things that we can do today with partners and allies is something that some other great powers in the world just do not have. The fact that we have an alliance like NATO, the fact that we have partners that are willing to be with us and contribute what they can when they can is important. Many of them can contribute more, and I believe the administration is trying very hard to get them to that level of contribution. But I will tell you there are some potential adversaries out there that do not have any partners and allies, and I would go to war with us anytime.

Senator BLUMENTHAL. You would go to war with our allies.

General MCDEW. With our allies anytime.

Senator BLUMENTHAL. Do you think they can and should do more?

General MCDEW. I believe that every country ought to do as much as they can. I think sometimes our asks are not as specific as they need to be in today's environment. For example, Estonia has some of the greatest cyber experts on the planet. Maybe that is their contribution. Maybe they do not have exquisite planes or exquisite ships, but they have the cyber capability. So contribute where you can.

Senator BLUMENTHAL. And some of their contributions are in kind, not necessarily monetary.

General MCDEW. Correct.

Senator BLUMENTHAL. So they are more difficult to measure. They still are material.

General MCDEW. They are. However, there are some countries that can provide monetary aid at a higher level than they are and they ought to.

Senator BLUMENTHAL. Thank you very much.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Blumenthal.

Senator Nelson?

Senator NELSON. Thank you, Mr. Chairman.

General, good morning.

I have the privilege, along with Senator Rounds, of heading the Cyber Subcommittee. He is our chairman. Needless to say, I think that we are very vulnerable in cyber. What authorities do you need to help the private sector improve their cyber defenses before we end up having a major disruption?

General MCDEW. Senator, I do agree with you that cyber is one of the challenges of our time, probably the greatest challenge of this generation. In that regard, we need a national cyber standard. We need to decide where the low watermark is for the country and get at least everybody to that direction.

I believe the other help we need is to understand this generation, as they grow up as high-end users of cyber, understand the high-end vulnerabilities of cyber. We taught them at one point in their lives to cough into their sleeves and to wash their hands when they are sick, but we have not taught them the dangers that face them in the cyber realm.

Senator NELSON. What is it going to take? Is it going to take a major cyber attack and therefore a shutdown of American industry for the private sector to really realize what is happening?

General MCDEW. Senator, I hope not. I still believe in America and I still believe in America's ingenuity. I still believe that we will eventually get it right. However, our history shows that getting our attention sometimes is difficult and painful, and sometimes it takes an economic crisis or sometimes it takes a financial ruin for some companies to get kind of religion on this one.

Senator NELSON. Over in the Commerce Committee, General, we are, hopefully, going to be able to pass an FAA [Federal Aviation Administration] bill, and since your Transportation Command certainly involves a lot of the use of the airspace, I think we have pretty well put to rest the fact that there was an effort by the airlines to want to privatize air traffic control. I think that is pretty much over and done with. Do you want to do any comment about that?

General MCDEW. No, Senator.

[Laughter.]

Senator NELSON. Well, just so the record is complete, I will say that for several years now, up until just recently, it was the position of the Department of Defense, as articulated by the Secretary of Defense's Office, that since they had about 20 percent of the airspace, they did not want to privatize air traffic control. So I will just leave it at that.

The KC–135's are really doing a workhorse job for you. Are they not, General?

General MCDEW. They are. They have been for 60-plus years, Senator.

Senator NELSON. But now the delays on the KC–46 are putting additional pressure on the 135's. Are they not?

General MCDEW. There are actually a number of factors working on those things besides age. I would love to be as young as some of them, but I am not. The other, maintenance capability and the

fact that the parts are not as readily available as possible—but those great young men and women, particularly the ones who maintain them, are doing a great job.

Senator NELSON. Well, has this impacted your readiness?

General MCDEW. It has. And a series of continuing resolutions do not help the fact that the Air Force has had to make some tough decisions on what they can fund and what they cannot fund, when they can fund those things. It has taken a slight dip in readiness in the KC–135 fleet.

Senator NELSON. When is it going to become apparent that it is a significant issue that is going to have to be confronted by the Air Force?

General MCDEW. I believe the Air Force understands the nature of the problem. They have also had a problem with being able to fund all the things that they need to fund and to be able to do it on a regular recurring basis. I am thankful for the budgets we have. I am hoping that they continue at least to be on a regularly scheduled period of time.

Senator NELSON. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Nelson.

Senator Cruz?

Senator CRUZ. Thank you, Mr. Chairman.

General, welcome. Thank you for being here.

In your testimony today, you explain that in today's operational environment, mobility forces may be required to transport and sustain U.S. and allied forces while under persistent multi-domain attack, including deception and data manipulation in cyberspace.

In your opinion, which TRANSCOM assets are most vulnerable in this contested environment?

General MCDEW. This may surprise you a little bit when I talk about TRANSCOM assets. The ones most vulnerable are the ones I do not own, and that is commercial industry. We have a strong cyber defense standard inside the Department of Defense, but outside the Department of Defense, I am not sure it reaches all of American citizens and all of American industry the way it ought to.

Senator CRUZ. If those assets are compromised, how would that impact your ability to perform the task given to you?

General MCDEW. It would be disastrous because 90 percent of our ability to take troops to war is in the commercial industry. Fourty percent of the cargo capability is in the commercial industry. It would be disastrous.

Senator CRUZ. So from your perspective, are there aspects in your budget that are focused on dealing with the vulnerability on the commercial side?

General MCDEW. Not at all, Senator.

Senator CRUZ. Let us shift. In your testimony, you also state that volatile geopolitics, shifting demographics, and emerging technology have all changed the character of war, the way we fight, and they are changing where wars are fought and who is fighting them. These new dynamics have a potential to bring a dramatic shift from the wars in the Middle East that have shaped much of the current force's expertise and experience.

How have you begun to shape the training and the mindset of TRANSCOM forces to prepare them for a war fought under these new conditions?

General MCDEW. Senator, we have not been perfect to date, but what we are purposely good at is understanding where our problems are now. Our contested environment war game that we had 2 years ago, followed up with one last year, has illuminated a number of the problem areas that we will have so that we have problem statements and solutions that we are trying to go after in each of them. I do not control all the areas because in my components that do the business of this nation projecting power to go to war, a good portion of it is outside of my control. So we are using contracting mechanisms to bring people up to a certain standard in some of those areas, and then we are continually having war games and exercises where we invite not just the services but commercial industry and academia to participate.

Senator CRUZ. Now, you just mentioned the contested environment war games. How are you measuring success during these training events?

General MCDEW. Unfortunately, Senator, we are in its infancy. Success right now is bringing everybody's knowledge level up. Two and a half years ago, we did not have a cyber standard in our contracts. We have one now. That is a direct result of that level of learning and understanding. If you were to come to my headquarters—and the invitation is out there now. If you were to come to our headquarters, you would see a level of discussion and dialogue and language being used that is vastly different from any other combatant command. I am a little bit parochial and proud, but I would say that would be true.

Senator CRUZ. I understand.

Have you all been able to take any lessons learned that have been operationalized as a result of the war games?

General MCDEW. We have. Most of it has been through what we have included in our exercises. So all of our exercises now assume some level of cyber degradation, every last one of them. It may be just at the tabletop level, but it is in every exercise. We bake attrition into every one of our exercises and everything we discuss, and then, as I said, the contracts all have cyber standards in them.

Senator CRUZ. One area that has been a persistent concern for me has been our vulnerability in space, and we are seeing more of our near-peer competitors targeting space assets. To what extent in war games or exercises are you all exercising in a space down environment with no satellite support or contact whatsoever?

General MCDEW. I cannot say that we do it in every exercise, but the cyber degradation also has a level of space because it is the precision navigation and timing aspect. That loss is catastrophic. So we are trying to bake more and more of that in every time we have an exercise.

Senator CRUZ. Very good. Thank you, General.

Senator INHOFE. Thank you, Senator Cruz.

Senator King, did you have a follow-on question?

Senator KING. Thank you, Mr. Chairman.

I was struck by your testimony a few minutes ago that we went from, I think you said, 1,288 U.S.-flagged ships in 1950 to 80 today.

Is that the correct number? It seems to me that really underlines the importance of the MSP program. I never thought of it that way before, but it is kind of an insurance policy. Should we be investing more heavily in that program in order to be sure that 80 does not become 20?

General MCDEW. Right now—I love the way you stated that. It is an insurance policy, and I think it is a very cheap insurance policy. If we were to have those 60 ships in our own yards, I would tell you it would cost you a lot more than $300 million, and that is all it costs us right now. It is an effective policy.

In our next set of mobility capability study, we will look at how much maritime capacity do we need and is it sufficient. I will be able to come back to you with that answer.

Senator KING. I hope you will because I would hate to low ball this and end up with a lack of capacity again in a crisis and say, gee, why did we not spend a relatively small amount compared with trying to build that fleet ourselves in-house. So I hope you will track that, and perhaps in your presentation for next year's budget, that is a factor.

General MCDEW. That study is due in September of this year to the Senate.

Senator KING. Good. Thank you very much.

Senator INHOFE. Thank you, Senator King.

Thank you very much, General McDew. We were commenting how excellent your answers have been during this hearing, and we appreciate that very much.

We are adjourned.

[Whereupon, at 10:53 a.m., the committee was adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR ROGER WICKER

ADDITIONAL SERVICE TO GUAM

1. Senator WICKER. General McDew, the United States has a significant and growing military presence on Guam. The United States military's footprint includes Andersen Air Force Base, Naval Base Guam, and about 7,000 servicemembers. Given its distance from Hawaii and the United States mainland, it is important that Guam has access to adequate container-fleet shipping. In 2015, a second shipping carrier began providing service to Guam from both Asia and the West Coast of the United States. What have been the implications of adding more shipping capacity from TRANSCOM's perspective?

General MCDEW. From a USTRANSCOM perspective, having additional options to provide global mobility solutions during a contingency is highly desirable, regardless of the theater of operations. The vast distances between land masses in the U.S. Indo-Pacific Command's (USINDOPACOM) area of responsibility (AOR), make a robust sealift capability particularly critical to the support of operations in the USINDOPACOM AOR. The addition of a second shipping carrier providing container service to Guam from Asia and the West Coast of the United States strengthens our commercial partnerships and enhances the resiliency of our lines of communication to this critical logistics hub. The additional capacity provides redundancy, flexibility, and additional sustainment capability that increases USTRANSCOM's ability to support USINDOPACOM humanitarian and contingency operations.

MARITIME SECURITY PROGRAM IMPORTANCE TO GUAM

2. Senator WICKER. General McDew, according to your written testimony, the Maritime Security Program (MSP) "provides an intermodal and logistics capability outside of the DOD portfolio that would be cost prohibitive to replicate." Guam is

served by an MSP container carrier. What is the military significant of having Guam served by shipping carrier that participates in MSP?

General MCDEW. Whether it's Guam other locations in the USINDOPACOM's AOR, or other locations around the globe, in the event of a major contingency, the Department of Defense will rely on the commercial capacity provided by the international carriers participating in the MSP and the domestic (Jones Act) carriers to meet sealift mission requirements. USTRANSCOM needs as many options as possible to service theater locations, in terms of lines of communications and the number of available carriers.

However, the Fiscal Year 2018 National Defense Authorization Act (Public Law 115–91), changed title 46, chapter 531 of the U.S. Code, prohibiting certain MSP participants to operate in mixed foreign and domestic trade, once they renew their MSP operating agreements. As a result, this option to service Guam will no longer be available in the near future.

QUESTIONS SUBMITTED BY SENATOR MIKE ROUNDS

OPERATION CONTROL OF ASSETS IN PACOM/EUCOM

3. Senator ROUNDS. General McDew, when we met in my office some months ago, you commented that statutory language prohibits TRANSCOM from operational control of KC–135s and C–130s stationed in the Pacific and European theaters. What is the state of play with this issue?

General MCDEW. USTRANSCOM will address questions surrounding operational control of mobility assets as we execute the Chairman's Dynamic Force Employment concept. In the interim, USTRANSCOM implemented a strategy of Global Mobility Agile Command and Control (GMACC). GMACC enhances command relationships between COCOMs, enabling the rapid movement through transfers of tactical control. While not a perfect solution, GMACC facilitates movement at the speed of war while Dynamic Force Employment continues to take root in the DOD.

QUESTIONS SUBMITTED BY SENATOR CLAIRE MCCASKILL

CYBER VULNERABILITIES

4. Senator MCCASKILL. General McDew, you testified that TRANSCOM began modifying existing Transportation Service Provider contracts to mandate compliance with the National Institute of Standards and Technology's (NIST) Special Publication 800–171. Has your staff looked into the possibility of including provisions in these agreements that enable the federal government the right of access to the Transportation Service Provider's systems to ensure compliance, and to monitor those systems or provide assistance in specific contingencies, such as in case of a cyberattack?

General MCDEW. When a contractor discovers and reports a cyber incident that affects covered contractor information or affects their ability to perform operationally critical services, current DOD cyber language included at Defense Federal Acquisition Regulation Supplement clause 252.204–7012 requires the contractor to allow DOD, upon request, access to information or equipment to conduct a forensic analysis and/or damage assessment. In addition to the Defense Federal Acquisition Regulation Supplement, USTRANSCOM's contract language allows for the conduct of an on-site review to assist the contractor in evaluating the extent of an incident and to share information with the contractor in an effort to minimize the impact to both parties. An on-site assessment may also be performed if a carrier is having difficulty in achieving compliance with NIST 800–171.

5. Senator MCCASKILL. General McDew, if you have, what has been your findings?

General MCDEW. To date, USTRANSCOM has not conducted an on-site assessment.

6. Senator MCCASKILL. General McDew, if you have not will your staff look into this being a possibility and the impact it may have?

General MCDEW. This capability is available to utilize should a cyber attack threaten USTRANSCOM's mission or impact readiness.

QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

MARITIME SECURITY PROGRAM (MSP)

7. Senator HIRONO. General McDew, the Maritime Security Program (MSP) provides an intermodal and logistics capability outside of the DOD portfolio that would otherwise be cost prohibitive to replicate. The MSP provides for a fleet of 60 militarily-useful commercial vessels operating in international trade. The vessels themselves are obviously valuable and essential to mobility planning, but the carriers operating under MSP also provide the American citizen crews that man the government-owned reserve fleet and a global intermodal logistics network that is available to the DOD. There are estimates value these ships and networks in the tens of billions of dollars. What are the challenges to the TRANSCOM mission if you didn't have the program?

General MCDEW. According to the National Security Directive on Sealift (NSD–28), "The U.S. owned commercial ocean carrier industry, to the extent it is capable, will be relied upon to provide sealift in peace, crisis, and war. This capability will be augmented during crisis and war by reserve fleets with national defense features that are not available in sufficient number or types in the active U.S. owned commercial industry."

Without the capabilities provided by U.S. flagged commercial industry through the Voluntary Intermodal Sealift Agreement (VISA) and the MSP, the DOD would have insufficient capacity to meet requirements and would be forced to expand the government-owned (organic) reserve fleets to replicate what commercial industry provides, at significant cost. Additionally, the organic fleets are manned and operated by commercial merchant mariners. Without the commercial manpower provided by the VISA and MSP programs, DOD would also be required to create the manpower programs (including training, certification and proficiency) necessary to operate an expanded organic fleet.

8. Senator HIRONO. What is the value of the MSP carriers' global networks to TRANSCOM and its mission?

General MCDEW. USTRANSCOM accesses U.S. flag commercial sealift capacity through the VISA and the MSP. These critical programs provide approximately twenty-five percent of required force deployment capacity and are used to transport nearly all sustainment cargo to meet global DOD sealift requirements.

Given the precipitous decline of the U.S. flag internationally trading sector from more than 1,200 ships in the early 1950s, to only 82 today, the MSP's 60 ships and the associated 2,400 highly qualified U.S. Merchant Mariners are holding the line against the further loss of this capability and its critical support to the Nation.

ENERGY RESILIENCE—FUEL AND ELECTRIC SUPPLY VULNERABILITIES

9. Senator HIRONO. General McDew, the committee is aware of concerns related to a stressed air refueling fleet, and that attention is needed to the air refueling mission. Further, the fuel carried by these tankers is critical to conducting missions in the PACOM region. Our adversaries pose serious threats in the Indo-Pacific region that would disrupt our ability to deliver fuel or electricity in support of TRANSCOM's mission. In the region, DOD relies on vulnerable fuel and electric supplies to conduct its military operations, where power outages on military installations or fuel supply disruptions could hinder our ability to conduct critical military operations. What are TRANSCOM's main concerns if our adversaries disrupted our fuel supplies in the Indo-Pacific region? How would TRANSCOM prepare and respond to such a disruption?

General MCDEW. USTRANSCOM's main concern, in any disruption of the bulk petroleum supply chain in support of the USINDOPACOM AOR, is our reduced organic capacity, specifically access to tankers to distribute bulk petroleum. The Voluntary Tanker Agreement (VTA) program, which is similar to the VISA, provides commercial tankers in a surge. The Maritime Administration is working to renew the VTA program to ensure more effective commitment of tanker capacity. The VTA is not part of MSP, though two product tankers (OVERSEAS SANTORINI and OVERSEAS MYKONOS) are in service under the MSP program providing assured access to these ships for DOD. USTRANSCOM is working with Maritime Administration to identify possible options for increasing the availability of militarily useful U.S. flag tankers for assured access by DOD.

Finally, the Mobility Capability Requirement Studies (MCRS) 2018 will examine the required capacity needed from our commercial partners. The study is due to Congress by September 2018.

10. Senator HIRONO. General McDew, based on expected growth in military capabilities in the Indo-Pacific region, how is TRANSCOM planning for the growing energy demands in the region? Can you provide recommendations for the committee to assist you?

General MCDEW. USINDOPACOM in collaboration with Joint Staff, Defense Logistics Agency Energy and Bulk Petroleum community continues to explore solutions in addressing the myriad of complex challenges for bulk fuel storage and distribution in the USINDOPACOM AOR. No single solution can mitigate theater-wide risks. However, DOD must think in terms of risk mitigation options across the Joint Force, commercial industry, Service components and DOD Agencies. Some of those options are continued support of new capability through the following:

a. Research, Development, Test and Evaluation (RDT&E) process
b. USN development of modular, adaptive and scalable sea-based petroleum discharge system program of record to augment or replace Off Shore Petroleum Discharge System capability
c. Development of Services' tactical storage and distribution system

One particular Research, Development, Test and Evaluation (RDT&E) project I would like to highlight is the Expeditionary End-to-End Fueling Concept (E3FC) RDT&E Project. USTRANSCOM, in collaboration with the U.S. Navy and U.S. Army Pacific as partners, is funding the E3FC project. The goal of the E3FC effort is to demonstrate a service interoperable capability that addresses "end-to-end" fueling requirements from ship-to-shore to inland distribution.

The E3FC deliverables will be a prototype modular pumping system which will reduce risk and inform development of the U.S. Army's Early Entry Fluid Distribution System. E3FC will also provide a development path for Navy/USMC ship-to-shore technology supporting transformational enhancements to improve USTRANSCOM's ability at providing the Combatant Commands with premium deployment, distribution, and sustainment.

ENERGY RESILIENCE—STRATEGIC IMPORTANCE OF RED HILL FOR FUEL RESUPPLY DURING CONTINGENCIES

11. Senator HIRONO. General McDew, the Red Hill Bulk Fuel Storage Facility at Joint Base Pearl Harbor is a key component of the DOD's operations in the Pacific and Asia, as it provides secure underground fuel storage for ships and aircraft. It is of vital strategic importance for strategic supplies of fuel for critical mission operations. What is the importance of this secure storage facility on the reliability and resilience of refueling in the Pacific?

General MCDEW. The Red Hill Bulk Fuel storage at Joint Base Pearl Harbor-Hickam is critical infrastructure and is a vital strategic node in the bulk petroleum supply chain. We are concerned about its age and maintenance upkeep. USTRANSCOM, as a voting member on the Defense Logistics Agency Energy Installation Planning Review Board influences the prioritization of Military Construction, Sustainment Restoration, and Modernization projects towards global posture. We seek continued support in funding for Red Hill's maintenance and restoration. Additionally, there are other storage facilities in the USINDOPACOM AOR that are critical to the bulk petroleum supply chain. We will continue to explore adversary capabilities and operational requirements in a contested environment to ensure storage facilities are at their optimal location in terms of risk mitigation and resupply operation.

CHINA: SOUTH CHINA SEA

12. Senator HIRONO. General McDew, Admiral Harris recently testified to this committee that China's provocative and destabilizing actions in the South China Sea continue unabated. And expressed great concern in actions to expand its influence by what appears to be the building of forward military outposts, built for the military, garrisoned by military forces, and designed to project Chinese military power and capability across the breadth of China's disputed South China Sea claims. As China continues to expand in the South China Sea, what is the main concern associated with its expansion in the region, and how will this expansion affect how TRANSCOM conducts its mission?

General MCDEW. The unrestricted flow of commercial and military surface and air traffic through the South China Sea is critical to national security, and the continued placement of advanced long range weapons systems and military bases within the South China Sea provides China the ability to effectively disrupt the air and sea lanes of communications in one of the world's busiest maritime choke points. China's continued development of precision long range weapons systems, construc-

tion of surface fleet combatant vessels, and improvements in air refueling capability is enlarging the envelope of People's Liberation Army anti-access operations.

13. Senator HIRONO. General McDew, does TRANSCOM have sufficient assets to project power and sustain military operations if current sea-lanes are impeded? What recommendations could you provide to ensure the readiness and resilience of our transportation forces to counter this threat?

General MCDEW. USTRANSCOM has sufficient strategic mobility force structure to achieve the objectives of the 2012 National Defense Strategy, which at that time assumed uncontested access to ports and infrastructure in theater. The 2018 National Defense Strategy asserts that every domain is contested—air, land, sea, space, and cyberspace, and the DOD can no longer assume uncontested deployments, and must prepare for mitigating risk in contested domains. To that end, USTRANSCOM and OSD–CAPE, in coordination with the Joint Staff, Services, and Combatant Commands are conducting the Mobility Capabilities and Requirements Study—2018 (MCRS–18) which will address the sufficiency of the mobility force structure to achieve the objectives of the 2018 National Defense Strategy which includes deployment in contested domains. MCRS–18 will be delivered to Congress in September 2018 and we look forward to more dialogue with you, plus collaboration with the Joint community in addressing these issues after the MCRS–18 findings and recommendations are shared.

FEDERAL AND STATE PARTNERSHIPS (WHOLE-OF-GOVERNMENT APPROACH)

14. Senator HIRONO. General McDew, TRANSCOM's mission relies on a whole-of-government approach with the Department of Transportation (DOT), along with other Federal and State agencies to ensure roads, rails, and ports are capable of supporting the warfighter's deployment and distribution requirements. This is because, the transportation infrastructure is not merely a medium for commercial and civilian use, but that it is a national strategic asset, critical to moving military members, equipment, and supplies in times of crisis. How does the TRANSCOM integrate a whole-of-government approach to accomplish its mission? And, how are Federal and State partnerships integrated into your mission?

General MCDEW. The Department of Transportation provides representatives onsite in the USTRANSCOM headquarters. These representatives are integrated with the USTRANSCOM staff and work routinely with the Surface Deployment and Distribution Command's Transportation Engineering Agency. The Transportation Engineering Agency monitors the strategic health of the national infrastructure—highways, railroads, and ports—to support military operations. The DOT leverages regulations, grants, and matching funds as well as the state and municipal partnerships already in place to maintain or upgrade the local highways, railroads, and ports. The Transportation Engineering Agency coordinates with the DOT to ensure the nation's transportation infrastructure adequately meets DOD needs.

Beyond our work with DOT, much of our interagency activities are operationally oriented and coordinated in our Global Operations Center. Most support for other agencies occurs through our supporting relationships with USNORTHCOM where the preponderance of interagency coordination occurs.

CYBER SECURITY: NATIONAL STRATEGY

15. Senator HIRONO. General McDew, threats in the cyber domain pose a serious threat to our decisive logistics advantage. And, this challenge is exacerbated by the inadequacy of implementing existing cybersecurity standards and the fact that DOD's extensive cyber protections do not extend to industry, creating vulnerabilities in our cyber security national posture. Although logistics and operations planning generally takes place on classified networks, ninety percent of military logistics and global movement operations are executed on unclassified commercial networks. Similarly, we have seen the lengths Russia has gone to disrupt our democracy in United States elections, and their use of social media for information operations. As our adversaries, such as China and Russia, continue to consolidate and integrate their cyber operations, are we losing a competitive advantage in cyber space by not doing so as well?

General MCDEW. Yes, I believe we can do more to integrate cyber at the national level, however I firmly believe that we are not disadvantaged against any competitor. USTRANSCOM advocates for and supports an integrated, whole-of-government approach to cyber. We are already leading the way in partnership with DHS, USCYBERCOM, and other federal agencies to leverage expertise collaboratively across the government. We are also laying the groundwork to leverage information provided to us by our Transportation Service Providers (TSPs). Our goal is to reach

real-time information sharing across the government and with our TSPs to mitigate cyber threats and respond rapidly to emerging threats.

16. Senator HIRONO. General McDew, do you believe the U.S. should develop a national strategy to consolidate and integrate our cyber operations to counter these threats? What is the greatest concern to your mission by a lack of national cyber strategy?

General MCDEW. Yes, I strongly believe a unified, whole-of-government approach to securing our nation's cyberspace is greatly needed. USTRANSCOM's greatest vulnerabilities lie in the fact that the Command operates by leveraging networks that traverse two distinct environments—the secure DOD Information Network (DODIN) and the unsecure, commercial Internet. These diverse environments are governed by organizations with differing authorities, roles and responsibilities, with unclear, undefined boundaries between them. USTRANSCOM has very limited visibility into the security posture of the various networks and nodes that its data transits on the internet, so it is not possible to guarantee security of this unclassified, mission-relevant information that must be provided to commercial carriers that operate exclusively on the unclassified internet, yet are responsible for conducting 90 percent of the USTRANSCOM mission. We are not the only federal government entity facing these issues and I support and advocate for a national-level strategy that encompasses and integrates all cyber efforts.

QUESTIONS SUBMITTED BY SENATOR MARTIN HEINRICH

CYBER ATTACK ON COMMERCIAL PARTNERS

17. Senator HEINRICH. General McDew, our ability to project and sustain force, at the time and place of our choosing, is one of the most critical elements of our military might. As you noted, our logistics enterprise relies heavily on commercial partners, making it more susceptible to cyber-attacks than other military functions. Despite this, the DOD's cyber protections do not extend to industry partners. Do you think this poses a risk to our ability to reliably deploy and sustain military force?

General MCDEW. Cyber vulnerabilities to the DOD mobility enterprise pose a significant risk to our ability to deploy and sustain military force. The Joint Deployment and Distribution Enterprise's Command and Control / Information Systems must send information on the classified and unclassified Department of Defense Information Networks (DODIN), as well as unclassified commercial networks. While DOD provides formidable cyber defense across the DODIN, commercial providers present a more vulnerable attack surface to adversaries and other nefarious actors. Select industry partners are better incentivized and therefore, better prepared than others. USTRANSCOM has incorporated initial cyber security standards in its contracts and established cyber security information sharing arrangements requirements with its Transportation Service Providers. USTRANSCOM is also assessing other solutions to include options such as third-party compliance inspections, enhanced information sharing, enhanced cyber safety standards within IT manufacturing, and potentially "War Powers Act" like authorities for DOD to provide cyber security for vendors that are consequential to national defense. As a last resort, USTRANSCOM must ensure there is sufficient resiliency across the strategic mobility enterprise to enable continued operations in a denied or degraded cyber environment.

18. Senator HEINRICH. General McDew, what is TRANSCOM doing to mitigate this threat?

General MCDEW. I am addressing these vulnerabilities by proactively enhancing partnerships with Transportation Service Providers (TSPs) and leveraging relationships with whole-of-government partners such as DHS, FBI, and others to work together to solve this problem that affects military, government, and industry partners. Certainly enhanced contract language and legislation can help, but strong partnerships will be just as important to our collective success in this space in the future. I am pursuing a partnership that assures our TSPs that we want to help them achieve better security without penalizing them, as their strong cybersecurity practices will ultimately improve their bottom line while enhancing USTRANSCOM mission success—a win-win scenario for both communities.

CYBER AUTHORITIES / DOCTRINE

19. Senator HEINRICH. General McDew, you wrote in your statement that "we need to link DOD and DHS cyber authorities across critical defense networks and

develop procedures to share information as we all operate among the same threats." What authorities do you think need to be linked between the DOD and DHS?

General MCDEW. I see a "gap" in authority to defend our mission critical data as it traverses the commercial internet. Title 6, title 10, title 50 and title 32 authorities need to be re-examined to keep up with the rapid evolution of the cyber frontier. Our nation needs a holistic approach to cyber spanning ".gov", ".mil" and ".com" and what federal authorities each agency can enact. As it stands today, DOD, DHS, and DOJ could all have varying responses to the same events in cyberspace with conflicting actions and mission sets. These individual agency "playbooks" all need to be brought together at the national level to ensure unity of effort and action.

20. Senator HEINRICH. General McDew, what networks do you identify as "critical defense networks?" Does this include commercial networks being used for TRANSCOM or other military missions?

General MCDEW. Critical defense networks include both the DODIN networks that are protected by DOD cybersecurity providers and the commercial networks that USTRANSCOM relies heavily upon that are owned by its transportation service providers. Further, these critical defense networks also extend to our various defense contractors who also have networks attached to the commercial internet with whom our data is entrusted.

21. Senator HEINRICH. General McDew, do you agree that a national cyber doctrine would help clarify the authorities and responsibilities for our various cyber defense organizations?

General MCDEW. I have sought and continue to advocate for a national-level dialogue on cyber security. In the near term, Congress can assist in this mission area by promoting this national dialogue on the importance of cybersecurity to every facet of our national fabric—from education to industry to defense and everything in between. It will be through this national dialogue that we can begin to seed the thought of baking in cybersecurity from the beginning—in our schools, health care, technology, and key infrastructure.

AIRCRAFT SURVIVABILITY

22. Senator HEINRICH. General McDew, the proliferation of long-range anti-aircraft weapons is bringing US high value assets such as our airborne ISR, command and control, and refueling tankers under increasing threat. For example, the sale of the Russian SA–20 Gargoyle SAM system to Iran could limit our ability to operate as freely in the Persian Gulf area.

As you may know, the Air Force is developing high-energy laser systems, like the Self-protect High Energy Laser Demonstrator (SHiELD) program, to protect fighter aircraft. It stands to reason that these systems would be even more effective on larger, slower aircraft. Given the availability of space and power, High Value Airborne Assets (HVAA) including Air Refueling tankers, Cargo, Bombers, and Command and Control aircraft are excellent candidates for early self-defense laser prototypes. Have you considered the use of high-energy lasers to protect TRANSCOM's high value assets?

General MCDEW. USTRANSCOM has considered the use of high-energy lasers to protect its Air Refueling tankers and Cargo aircraft. However, the Air Force has not been able to fund the advanced R&D and the follow on procurement of these systems within available Total Obligation Authority. Targeted funding for the Air Mobility Command, Air Force Reserve Command, and Air National Guard assets would allow USTRANSCOM to better protect its air arm. In order to make SHiELD work, tankers and cargo aircraft require additional systems. Air Mobility Command aircraft lack situational awareness of the threat environment, and integrated systems to tie that situational awareness to the protection provided by a high-energy laser.

23. Senator HEINRICH. General McDew, what aircraft self-protect requirements have you requested through the military services? What type of resources do you need from the military services for this purpose?

General MCDEW. There is a long-standing requirement for aircraft self-protect and awareness in the form of the Advanced Situational Awareness & Countermeasures Capability Development Document. This document was issued as a requirement in 2006. However, the Air Force does not have the funding necessary to enable pursuit of the requirement. In order for USTRANSCOM air assets to be protected, Air Mobility Command will need funding in the form of RDT&E to develop and/or acquire systems that provides a common operating picture of battlespace situational awareness and own-ship self-protection.

24. Senator HEINRICH. General McDew, adapting the mature SHiELD pod HEL system for larger aircraft self-defense can be accomplished at an expedited pace in parallel with the SHiELD prototype. Do you support also applying the SHiELD program to your larger aircraft?

General MCDEW. As long as funding is programmed to integrate SHiELD into a conformal aircraft design rather than the initial pod, then yes. There are several concerns that need to be addressed with the SHiELD program that in its current and forecast form will limit or inhibit operational effectiveness.

DEPARTMENT OF DEFENSE AUTHORIZATION REQUEST FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, APRIL 12, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

ARMY POSTURE

The committee met, pursuant to notice, at 9:37 a.m. in Room SD–G50, Dirksen Senate Office Building, Senator James M. Inhofe, presiding.

Committee Members present: Senators Inhofe, Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cruz, Graham, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Our meeting will come to order. Let me explain what we'll be doing. We have two votes. One vote's taking place right now. Those members who are here now have already voted. We're going to be working right through the second vote so that we won't have to keep you folks any longer than necessary.

The committee meets today to receive testimony on the posture of the United States Army and its fiscal year 2019 budget request. We welcome Dr. Mark Esper, Secretary of the Army, and General Mark Milley, Chief of Staff of the Army.

The National Defense Strategy directs our Nation's military to prepare for the return of great-power competition. This means that we must be prepared to deter and, if necessary, defeat potential near-peer adversaries, both China and Russia. With their alarming speed of modernization of both conventional and nuclear forces, these adversaries now present a credible threat to America and our allies in the regions. It's time for us to take stock and act. Senior Army leadership has said the service is outranged and outgunned. That's a frightening thought, and we've heard it over, over again, and it is a fact.

As currently organized and equipped, the future of the Army's readiness and relevance requires modernization now. The Army's modernization program unveiled last fall shows you take this challenge seriously. The solutions for acquisition and program management will help the Army repair identified capability gaps within

the force. Any successful modernization strategy must focus on results. Rapid prototyping, and the realistic experimentation will be vital to getting modern, reliable, lethal weapons into the hands of our soldiers, and doing so on time.

With the calculation of Crusader and Future Combat Systems, we have fallen woefully behind in our artillery. That's something that I'm very sensitive to, and we remember how much money both the Crusader and the Future Combat System ended up costing, and really, we got nothing from it, and we're not going to let that happen again. A lot of that's going to be the acquisition that we are working on now.

Now we have a system integral in solving these issues. We have no doubt but the cross-function at teams currently operating there—we're talking about Fort Sill—will help solve the disparity with our adversaries. We look to you gentlemen to lead the effort for real, sustained modernization. It will require your engagement, leadership. It will require you to make hard choices, set priorities, and accept some risk, and it will require an open and transparent dialogue with Congress along the way. We look forward to working with you to make our shared modernization vision a reality as the Army reinvents itself to become the 21st Century fighting force prepared for it.

We're waiting now for Senator Reed to get here, and we're going to get his opening statement and start right away, but this is different than anytime that I recall. I've been on this committee for 24 years, and on the House committee for 8 years prior to that, and to see that we're going to finally have to do something with acquisition. But, we've never been faced with—several of us just came back from the South China Seas, and we watched what China is doing with the islands they're building out there. It's almost as if they're preparing for World War III. Our allies in that part of the world—and I've talked to you folks about this before—realize that this is a—that they're watching China flex its muscles out there, and they are kind of taking—deciding who to take sides with. These are our allies. So, this is something that I'd suggest you guys have not had the opportunity to experience prior to the time that we're experiencing today.

Let me just see—yeah, what we're going to do, we're going to start with your opening statements. Senator Reed is on his way, and what we'll do is interrupt your statements so that he can give his opening statement. Is that all right? Very good.

Let's start with you, Secretary Esper.

STATEMENT OF THE HONORABLE MARK T. ESPER, SECRETARY OF THE ARMY

Dr. ESPER. Well, Senator Inhofe, distinguished members of the committee, good morning, and thank you for the opportunity to appear before you today.

Let me say up front that the Army's readiness across its formations is improving, and, if called upon today, I'm confident we would prevail in any conflict. This is due, in part, to the increased funding Congress provided last year. For this, I would like to say thank you.

The Army's mission to defend the Nation has not changed, but the strategic environment has. Following 17 years of sustained combat, we now face a future characterized by the reemergence of great-power competition and the continued challenges posed by rogue states and nonstate actors, making the world ever more complex and dangerous. To address these challenges, the Army is changing. We have a comprehensive plan to ensure our long-term dominance. In fact, since my previous testimony before the committee on December 7th of last year, we have released our vision for the Army. Our vision is fully consistent with the National Defense Strategy, and one that General Milley and I believe will ensure our success for years to come.

We will achieve this vision through focused and enduring priorities encompassing several major long-term lines of effort. But, a vision alone will not make the Army successful. We must have predictable, adequate, sustained, and timely funding. Fiscal uncertainty has done a great deal to erode our readiness and hamper our ability to modernize. 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.

Senator INHOFE. Yes, thank you, Mr. Secretary.

Just for a moment—would you like to give your opening statement?

Senator REED. Well, Mr. Chairman, would it be better for the Secretary and the Chief to finish, and then I'll——

Senator INHOFE. That's a good idea.

Continue.

Dr. ESPER. Yes, sir.

With regard to Russia and China, both countries are taking 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. In support of the National Defense Strategy, the Army is increasing our lethality along three focus priorities: readiness, modernization, and reform.

Readiness is the top priority, because only a ready total Army—that's regular Army, Guard, and Reserve—can deter conflict, defeat enemies, and enable the joint force to win decisively. We are refocusing training for our soldiers to be more lethal and more resilient on the high-intensity battlefield of the future. We are also increasing home station training, getting more repetitions for our formations at the company level and below. We are giving training time back to commanders by reducing certain self-imposed mandatory training requirements not tied to increased lethality and by eliminating excess reporting. We have maximized the number of Combat Training Center rotations to 20 per year, four of which are dedicated to the Reserve component. These rotations are focused on the high-end fight, replicating near-peer competitor capabilities, including increased enemy lethality, degraded communications, persistent observation, and a contested environment.

While the quality, training, and spirit of our soldiers are what make the U.S. Army the most ready and lethal ground combat

force in history, our superiority is enabled by the best weapons and equipment we can provide. As such, our second priority is modernization, or future readiness. To ensure our soldiers never enter a fair fight, the Army is now increasing the investments in modernizing the force. Our modernization strategy is focused on one goal: making our soldiers and units far more lethal and effective than any adversary. 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 my written statement, and each is the purview of a newly established cross-functional team. The purpose of these CFTs [Cross Functional Team] is to determine the requirements of needed capabilities to ensure all stakeholders at the table from day one, and to focus Army resources on accelerated experimentation, prototyping, and fielding. In order to ensure battlefield success, our doctrine must reflect the threat environment we face and remain apace with our efforts to modernize our equipment.

Our third priority is reform, freeing up time, money, and manpower to enhance readiness, accelerate modernization, and ensure the efficient use of resources provided to us by the American people. Our reform efforts, particularly within the acquisition system, are long overdue. While Futures Command is probably the boldest reform we are pursuing, other reform initiatives owe much to the acquisition authorities delegated to the services in prior NDAAs. Within 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.

Another essential reform effort is development of a modernized personnel system based on the principles and practices of talent management found in the private sector, a system much more open, flexible, and dynamic so that we can better attract, develop, and retain the best and brightest our Nation has to offer.

A ready and modernized Army is critical to defend the Nation, but 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 by leaders, to treat everyone with dignity and respect. Finally, strengthening our alliances and partners by building stronger ties through a number of initiatives. 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 defense authorizations and funding increases requested in the fiscal year 2018 and 2019 budgets. I look forward to your questions and appreciate the opportunity to discuss these important matters with you today.

Thank you.

Senator INHOFE. Thank you, Secretary Esper.

General Milley.

STATEMENT OF GENERAL MARK A. MILLEY, USA, CHIEF OF STAFF OF THE ARMY

General MILLEY. Thanks, Senator Inhofe. I appreciate the opportunity. Thanks, Ranking Member Reed and all the distinguished members of the committee, for the opportunity to testify today.

Although he's not here today, I also want to acknowledge and recognize Chairman McCain for his immeasurable support to our Army and his lifetime of incredibly brave and dedicated service to our Nation. Each of us in the Army prays, as you do, for his speedy recovery and return to the Senate.

I want to start by thanking Congress for the 2018 bill. That was significant. It has tremendous impact on the future readiness and the current readiness of our Army, and impact on morale of the force. As you know, this funding is vital, and we will all work diligently to spend these dollars in a responsible manner over the last two quarters of this fiscal year.

Thank you, also, for the general increases in the defense caps for 2018 and 2019. These increases support the new National Defense Strategy and advance the Army's readiness and lethality while allowing our Army to modernize for the future.

In short, what these monies have done is stopped a steep decline, it stopped the bleeding of the Army, and we are on the mend. I can report out to you today that 2 and a half years after I became the Chief of Staff of the Army, we are in significantly better shape through the generosity of the American people and this Congress. It's essential, though, that we maintain these increases, as returning to BCA [Budget Control Act] caps will halt our ability to modernize, and it will reverse any recent gain in readiness.

The demand for ready, able, and lethal Army continues. Today, we have about 180,000 or so soldiers supporting combatant commands around the globe, including ongoing operations in the Middle East and supporting our posture in order to deter operations—order adversary operations in Europe and Asia-Pacific. The Army roughly fills about 50 percent of annual planned demand by any of the combatant commanders. And, of emergent demand or unplanned demand, the Army fills between 60 and 70 percent of all of those requirements. Our newly created SFABs [Security Force Assistance Brigades], for example, are already in high demand from all the combatant commanders. One of them, just yesterday, asked for an SFAB to be assigned to him. The first deployed this past couple of months, and the second has been activated, and we are quickly proceeding with a third, fourth, fifth, and sixth. Your support has allowed the Army to field those units, and has allowed the Army to become significantly more combat ready today than we were just 24 months ago.

We have increased the number of Combat Training Center rotations, as Secretary Esper talked about. We've improved our equipment operational readiness rates. We've improved these flow of spare parts. We've replenished our Army pre-positioned stocks in both Asia and Europe. We've improved munitions around the world. We've significantly improved our manning shortfalls and filled holes inside of our operational and deployable units. In short, we have a better Army today than we had just a short while ago.

The bottom line is that the United States Army continues to meet all the missions required of us. Thanks to your support, we are more ready. But, we cannot be content with simply being ready for today's global demands. Instead, we must focus on readiness both now and in the future. The National Defense Strategy calls for us to build a more lethal force. As noted by Secretary Esper, we face long-term competition with China and Russia, and regional and serious threats from Iran and North Korea, as well as ongoing operations against terrorism.

The strategic global environment is increasingly unstable and increasingly dangerous, and there is no time to pause. We know these competitors, these great-power competitors, both China and Russia, have made significant advances in the development of advanced weapons, technology, and the capabilities of their military forces. I'd be happy to go into great detail in a classified briefing on that.

We must maintain our overmatch to achieve victory against any adversary at any time. The increased lethality on a future battlefield is going to require that. To both stay ready and to build a force of the future, that's going to require predictable, adequate, sustained, and timely funding. The Army's fiscal year 2019 budget requests our priorities to grow and maintain a highly capable force both today and to modernize and build our future force and to take proper care of our soldiers and family members and Army civilians while being good stewards of the taxpayer dollar. We recognize the American taxpayer entrusts us with a significant amount of money to meet these demands. 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 our soldiers remain ready to fight tonight as we prepare for the unforeseen conflicts of tomorrow.

Thank you for the opportunity to testify, and I look forward to each of your questions.

[The joint prepared statement of the Honorable Mark T. Esper and General Milley follows:]

JOINT PREPARED STATEMENT BY THE HONORABLE MARK T. ESPER AND GENERAL MARK A. MILLEY

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 leader-

ship, 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 United States 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. Twenty-four thousand 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 United States 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 fiscal year 2019 budget request totals $182.1 billion which consists of $148.4 billion in the base budget and $33.7 billion for Overseas Contingency Operations (OCO). This represents an eight percent increase over our total fiscal year 2018 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. Fiscal year 2017 and fiscal year 2018 authorizations and fiscal year 2017 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 fiscal year 2021. 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 fiscal year 2019 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 fiscal year 2023, and the Long Range Precision Fires Missile, accelerated to fiscal year 2021 protect and ensure freedom of maneuver to forces in contact with the enemy in deep, close, and rear operations. The Army has included $73.7 million for Long Range Precision Fires in the fiscal year 2018 Enhancement Request, with $22 million in additional requested funds in the fiscal year 2019 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 fiscal year 2021, with $13.1 million requested in the fiscal year 2018 Enhancement, and $84 million in the fiscal year 2019 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 fiscal year 2024, and the Modular Open System Approach, a software prototype that has been accelerated from fiscal year 2028 to fiscal year 2026. $25.1 million is included in the fiscal year 2018 Enhancement Request for Future Vertical Lift, with additional funds included in the fiscal year 2019 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. $180 million is included in the fiscal year 2018 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 fiscal year 2018 Enhancement Request includes $81 million to experiment and procure Enhanced Night Vision Goggles by fiscal year 2021.

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 con-

solidation 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. 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.

Senator INHOFE. Thank you, General Milley.

Senator Reed.

STATEMENT OF SENATOR JACK REED

Senator REED. Thank you very much, Mr. Chairman.

Let me join you in welcoming Secretary Esper and General Milley. Thank you, gentlemen, for your service. Please thank the men and women of the Army for their great service. I look forward to your response to our questions as we move forward.

The President's Budget request for fiscal year 2019 includes $182 billion in the funding for the Army. Of that amount, 148 billion is for base budget requirements and 34 billion for overseas contingency operations. As the committee considers the Army's funding request, we must be mindful, as you've pointed out, of the risks facing our country and our national security challenges.

The new National Defense Strategy is focused on the reemergence of long-term strategic competition, which makes the threat posed by China and Russia the primary focus for the Department. This strategic shift will require the Army to train for full-spectrum operations and to field equipment necessary for a high-end fight. The new strategy also assumes risk in our counterterrorism mission, as it is no longer the primary national security concern. As you go forward, your comments on views on how the Army is going to balance that shift to the high-end, near-peer fight while seeking more efficient approaches to counterterrorism would be deeply appreciated.

Several months ago, the Army created a number of cross-functional teams, as you pointed out, Mr. Secretary, that were designed to break down acquisition stovepipes so new technologies and modernization platforms could be delivered to the force in a more effective manner. I would ask, going forward this morning, that you would share with us what you've learned so far from these efforts, and how these teams will inform your modernization efforts throughout the Army.

In addition, given the new emphasis on great-power competition, I hope you will also discuss the necessary investments in modernization that you're emphasizing in this budget, and not this—just this budget, but budgets that might follow. Modernized military platforms and upgraded equipment are necessary to prevail in great-power competitions, but success against a near-peer adversary also requires the Army to build and maintain readiness levels, as you've pointed out. This hearing is an opportunity to update in more detail the Army's current efforts to rebuild and sustain readiness.

Finally, the budget request seeks an increase of 4,000 Active Duty soldiers, as well as increased full-time support for the Reserve component. It's imperative that, as the Army grows, it remains focused on the quality of our soldiers rather than the quantity. The training and readiness of our soldiers is paramount. Enhancing the fighting ability of the force, we must have a situation where we don't allow size to overcome quality.

The President's Budget also requests an across-the-board pay raise of 2.6 percent for all military personnel, which I think has universal support here. But, the President does not request an increase in civilian pay. In fact, there's a freeze. That will make it very difficult to recruit the high quality civilians that you need, and reward those that you need to stay with the Army.

I hope, again, to get your comments on these and many other issues. Again, thank you very much for your testimony and your service.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Reed.

Let's start off with—we talked about the condition that we were in a year ago, in terms of our brigade combat teams, our readiness. We are, you know, understandingly, happy with what happened with our fiscal year 2018 and fiscal year 2019 budgets. The problem is, that is good only up to fiscal year 2020. Now, I think it's a good time to get on record—let's assume that we, for some reason, had to go back to the BCA spending caps, starting in 2020, and that we were not fortunate enough to keep up the increase that we achieved in 2018 and 2019. I would like to have each of you express what our condition—the condition of our Army would be if that were to occur and we had to go back to those caps.

Secretary Esper.

Dr. ESPER. Well, thank you for that question, Senator Inhofe. It's clear that what it would mean if we are unable to sustain funding is that we would revert back to where we were a few years ago, that we would reverse the gains that we are currently making with regard to either training readiness, equipment readiness, munitions purchases that are critical for warfights, and the personnel gains that are necessary to ensure that we have sufficient end strength to meet the demands of the combatant commanders and are prepared to execute the National Defense Strategy. So, it would be a lost opportunity as we—we're really building momentum right now.

I think, to address Senator Reed's question, the critical thing is, as we continue to improve our readiness, which we've seen good growth in, we need to make sure that we can sustain it, then, through 2020, 2021, 2022, because, after 9–10 years of warfighting and bad budget challenges, it will take many years to get back to the readiness posture we need to be in.

Senator INHOFE. Yeah. Right.

General Milley.

General MILLEY. Yes, Senator. We've done extensive analysis over the last couple of years, just in the event that that were to happen. If we went to sequestration caps, bottom line is, for the ground force, the Army, that we would end up essentially doing individual training and collective training up through squad level and, in some cases, platoon level. Squad and platoon training, an Army does not make. You've got to be able to do company, battalion, brigade, and so on. Training only at those levels, and funded only at those levels, would not work.

Flying hours, right now we're coming in at close to 14, 14 and a half hours with current budgets. We'll drop back to 10, 11, 12. That's not good for our aviation rotary wing. Home station training will come to a halt. The CTCs will come to a halt.

It will not be good if we went backwards. If the intangibles, the effect on morale, cohesion, enlistment, reenlistment—right now, in terms of reenlistment, we've already exceeded our 2018 reenlistment. We're working on 2019 reenlistment, which is an indicator

of morale that's going up. All of those things would take steps backwards. So, I would strongly encourage not to do that.

Senator INHOFE. Yeah. I think it's important to get that out in the open now, talk about it now.

Now, another area that I'm particularly interested in, of course, is our artillery, the fact that other—both China and Russia have passed us up, in terms of range, in terms of rapid-fire. Right now we're in a position, we're—are working the system to correct that, the PIM program. In my opening statement, I talked a little bit about what's happened in the past with the Crusader, the Future Combat System. But, now we have this program that I think is going to be—put us in a position where we should be, getting back up in—ahead of our adversaries. That's what we want to get done.

Secretary Esper, can you articulate what your number-one priority is for modernization to meet the new National Defense Strategy? Let's start with that.

Dr. ESPER. Yes, Senator. The Army has outlined six modernization priorities, beginning, number one, with long-range precision fires, and the sixth being soldier lethality.

With regard to long-range precision fires, we are pursuing technologies at the tactical, operational, and strategic level. So, at the tactical level, as you mentioned, the PIM program is very important. At the operational level, it's the extended-range cannon artillery. At the strategic level would be hypersonics, the ability to really reach deep and—in support of the Navy and the Air Force to do that. I will tell you that, as I've traveled the Army, in the 4 and a half months, and spoke to a few combatant commanders, they have also conveyed to me the importance, the criticality of long-range precision fires to their respective warfights.

Senator INHOFE. That's good.

General Milley, I—just one real quick question as to—your goal has always been to be up to 66 percent. We actually in—my information was, we dropped down—in the—our BCTs, capability went down as low as, what, 33 percent. Now we're—I understand we've improved dramatically on that. We're going to continue to do it. But, how close are we now to your goal, 66 percent?

General MILLEY. Our readiness goal for the regular Army, the Active Duty Army, is 66 percent of all units, all types of units—brigade combat teams, logistics units, aviation units, et cetera—so 66 percent for the regular Army, and 33 percent for the Reserve component, both Guard and Reserve. We are not at those benchmarks right now, but we are working towards them, and we predict, given consistent funding and if the world stays the way it is right this minute, then we should achieve those benchmarks sometime in 2021, 2022. We have made significant progress.

Senator INHOFE. Okay.

General MILLEY. What you're citing as 30 percent or so is from a year or so ago. We're at—for brigade combat teams, which is only one slice of the total force, we're in the range of the 50 percent mark. So, we have made significant progress in the last 24 months.

Senator INHOFE. Yeah, that's good.

Senator Reed.

Senator REED. Well, thank you very much, Mr. Chairman.

My question—first question will follow at least the theme that the Chairman has set, and that is that he pointed out one area of technological overmatch by our adversaries, but there are several, unfortunately, including command-and-control disruption because of cyber. So, in general, how are you going to—dealing with this issue of technological overmatch, not just in precision fires, but in a host of other issues?

Dr. ESPER. Senator, another one of the six modernization priorities is the network. We know that we've learned, from various studies, what we saw the Russians do in Ukraine, that we need a network that is reliable, that is resilient, that is mobile, that can meet our needs in such an environment. We are fairly confident that the future adversaries will certainly strike asymmetrically at our space systems, at our information systems, our networks. So, we need to do everything from looking at the next-generation technology to make sure we have resilient systems, but, at the same time, we need to look at training, make sure soldiers are training now to operate in a environment in which they either have no data or coms, or limited.

I was pleased to see, on my first trip to National Training Center in November, that the 1st Cavalry was actually doing that. The Op4 out there were presenting that type of scenario, and we were training in a—an environment of limited communications. That's the guidance we have set out for commanders, as well, to be able to train along that spectrum.

Senator REED. General Milley, are there other areas of overmatch that you want to emphasize?

General MILLEY. The six priorities that we've laid out, which are related to the fundamental functions of an Army to shoot, move, communicate, protect, and sustain are long-range precision fires, the upgraded vehicles, rotary wing aircraft, future vertical lift, the network that the Secretary just mentioned, ballistic and air missile defense, and then all the soldier improvements in the soldier lethality—those are the areas where we want to laser focus, where we think that we can make significant advances.

There's two particular technologies that we need to put the pedal to the metal to, both as a country, a Department of Defense, and as an Army: artificial intelligence and robotics. Those are significant. We're in a period of the changing character of war. Those two technologies, perhaps more than others, will have fundamental impact on the character of war coming up. So, we are shifting monies in our R&D [Research & Development] and S&T [Science & Technology] accounts into those technologies, as well as many others.

Senator REED. Do you think there is enough resources going to those accounts, not just in the Army, but DOD-wide and governmentwide?

General MILLEY. I think we should put more, is my personal—or my professional opinion is, we should add monies into those particular research, development, science, technology accounts.

Dr. ESPER. I would add—Senator, that I meet frequently with Secretary Spencer, the SECNAV [Secretary of the Navy], and Secretary Wilson. We've had these same discussions about those technologies, hypersonics, and a couple of others, where we really need to pull our efforts together and look at how we can make sure that

we're making advances and not duplicating efforts, to get more bang for every dollar we put toward it.

Senator REED. As I mentioned in my opening statement, as I think we've all mentioned, is that the new defense policy has pushed us up into the area of near-peer competition. There is a tendency of Army's—based on my experiences, you only can do, really, one thing, and that's what you focus on. You know, when—1970s and 1980s, we got out of counter-guerrilla warfare and we got into the air-land battle. We did it very, very well. But, we had to reimmerse ourselves into counterinsurgency warfare techniques and equipment and practices in Afghanistan and Iraq.

Now we have not just two dimensions, but probably three dimensions. You have conventional warfare, you have hybrid warfare, which is right below that, with a sophisticated enemy with technological advantages and disadvantages, and then you have the counter-guerrilla warfare, like we're practicing in—or counterinsurgency in Afghanistan. How are you going to keep that balance between these three missions and avoid the danger of we-just-do-and-we-do-it-very-well X?

General Milley, you want to start?

General MILLEY. Well, I think you're correct that, post Vietnam, we sort of did away with any kind of skillsets that we had, for the most part, within our inventory, in terms of counter-guerrilla/counterinsurgency warfare. We don't have that luxury. Guerrillas, insurgents, terrorists are going to be around for a long time in various different forms. We have to maintain the skillset. We can't throw the baby out with the bath water. So, we have to keep that going, and we intend to keep that going. That's part of the SFABs [Security Force Assistance Brigades]. There's a large resident capability within our Special Operations Forces for that. But, our conventional forces also need to have skills in that regard. But, at the same time, we have to recapture our skills at combined-arms maneuver warfare against near-peer competitors in great-power competition, because, you know, frankly, you know, probably the word "peace through strength" is sometimes overused, but it's true. In the international environment, you have to maintain the capabilities so that your opponent, your adversary, believes and knows that you have incredible dominating strength and incredible lethality on the battlefield. So, we have to be able to do both capabilities—as a military, not just as an Army—in order to deter any potential aggression from any other country. If we don't do that, then you invite aggression, in my view.

So, it's incumbent upon us to do that, to invest in those capabilities, to maintain those skills. That's a very expensive proposition, and we recognize that. But, maintaining the peace is a very expensive proposition. The only thing more expensive than that's fighting a war. The only thing more than that is losing one.

So, it's really important, I think, as we go forward in these budgets, that we continue to sustain predictable funding to be able to do both counterinsurgency, counterterrorist-type operations within our force structure, and higher-end conventional operations against a great-power competitor.

Senator REED. Thank you.

Senator INHOFE. Thank you.

The second vote has started. Senator Reed is, I believe, going to go down and vote at the first of it, and I'm going to wait toward the last.

Senator Cotton.

Senator COTTON. Thank you, gentlemen, for your appearance again. Thank you for your service to our country.

General Milley, let me just follow up on what you just said about sustained funding. So, we passed a budget a couple of months ago. Last week—or last month, we passed spending bill for this fiscal year. I don't think we should spike the football about those things, though. Those were long overdue. We still have to pass a defense appropriations bill for the next fiscal year. So, is the point you're making—and, Secretary Esper, you made it to Chairman Inhofe—is that you needed Department of Defense appropriations bills done in a timely and predictable fashion this summer?

Dr. ESPER. Absolutely, Senator. If—timeliness is critical to that. If not, what it does is push back our spending authority. If we're—we are under a CR [Continuing Resolution], as you know, we are not allowed new starts. We are not allowed to in—spend money greater than the previous-year funding level. We are not able to procure additional munitions. It impacts training, because we have reduced O&M [Operations & Maintenance] dollars. So, there are a—any number of reasons why the timeliness is critical to ensuring we are able to maintain the positive glide slope we're on with regard to readiness.

Senator COTTON. That carries us out to the next fiscal year, fiscal year 2019, that is covered by the 2-year budget we just passed. But, we still have fiscal year 2020 and 2021 ahead of us, about 16–18 months away, for which the Budget Control Act and sequestration still comes into effect. Is it your judgment that Congress needs to act now to stop that kind of sequestration from even looming over the Army's head, come the summer of 2019?

Dr. ESPER. Yes, sir. For all the services, it's critical to all of us achieving our readiness goals. With regard to the Army, in particular, as I said earlier, we endured 7, 8, 9 years of falling budgets, a very high operational pace. It's going to take many years to get out of that. If you step back, we have this goal of achieving our readiness status by around 2022. It's that point in time where we want to—really want to start making significant investments and start fielding—prototyping the next generation of technologies that we've outlined in our modernization priorities.

Senator COTTON. General Milley?

General MILLEY. Absolutely, Senator. I mean, you're not going to dig out of a 10-year trough, 8-year trough, in readiness and modernization—you're not going to do that in 2 years. It's not one-and-done sort of thing. So, it has to be consistent, it has to be predictable over time. The sequestration, the BCA [Budget Control Act] caps, they just need to go away. It's an incredibly efficient—inefficient means of funding, when we're only given part of the year to spend. With industry, it's not predictable, so you can't do long-term contracts. There's a wide variety of reasons why it is not an effective or efficient means of using the taxpayer dollars. It needs to go away.

Senator COTTON. Yeah. So, the Budget Control Act was designed to have 8 eight years of potential sequestration cuts if budget caps aren't met. We have now gone through three iterations of 2-year budget cycles. I predict that, if we don't repeal the Budget Control Act, we'll have a fourth iteration in 2020 and 2021 before that law expires. I think Congress should just repeal it outright this summer.

General Milley, I want to return to what you said about readiness. So, you predict that, barring some significant increase in the demand for land forces, all Army elements will be—will meet your readiness goals by 2021–2022?

General MILLEY. That's the glide path I'm currently estimating, that's correct.

Senator COTTON. Where are brigade combat teams today?

General MILLEY. I don't want to give specific numbers in open testimony. I'll be happy to do it in classified testimony. But, it's in the range of 50 percent.

Senator COTTON. Where were they when you took this job, 3 years ago?

General MILLEY. Significantly less than that. When I came in, 2-½ years ago, we had two brigades at the highest level of readiness.

Senator COTTON. Okay. Good work.

Secretary Esper, I'd like to turn to a point about long-range fires. It has a policy implication. So, Department of Defense, Department of State have long recognized and acknowledged publicly that Russia is violating the INF [Intermediate Nuclear Forces] Treaty. If Russia continues to violate the INF Treaty and the United States continues to observe the INF Treaty, doesn't it stand to reason that there's no way the United States can make up the gap in long-range fires in Europe?

Dr. ESPER. It is. We are looking at hypersonics as a potential way, a promising way to be able to reach beyond the treaty constraints imposed by the INF. So, that's one option. But, clearly, as I've spoken to industry, if that constraint did not exist now, we could certainly do it with missiles.

Senator COTTON. It would be the easier way to do it than developing hypersonics that might be compliant——

Dr. ESPER. Probably easier and quicker, although hypersonics provide—have some benefits that—in terms of volume of fire and other things that you can do. But, yes.

Senator COTTON. General Milley, I'd like to turn to an operational aspect of another one of the six modernization priorities, the network, and, specifically, fighting in a denied environment. Both of you have discussed with me how we're working with our soldiers to make sure that they can go back to the old-fashioned way of fighting, with compass and map and so forth, in the call for fire and navigation and what have you. If that were to happen, if our soldiers had to fight in a denied environment, surely the enemy soldiers would also be fighting in a denied environment, as well, right? There's no situation in which, to use the football term, it won't be raining on both sides of the field?

General MILLEY. No, I think that all modern militaries are incredibly reliant on very sophisticated command-control communica-

tion systems, reliant on space systems, GPS, you know, precision in navigation and timing capabilities. All modern militaries rely on those. Those are vulnerable for all forces. So, yes, I guarantee that any adversary that takes on the United States will be operating in a significantly degraded environment.

Senator COTTON. So, if our soldiers are using compasses and hand-and-arm signals, so to speak, to put it in colloquial terms, their soldiers will be using compasses and hand-and-arm signals.

General MILLEY. I would imagine that that is very likely.

Senator COTTON. Do you have any doubt that our soldiers fighting on those terms are going to be able to defeat their soldiers?

General MILLEY. Well, as you know, that our Army, like modern armies, we're very reliant on these things for navigation and for precision munitions and for calling in close-air support. It's important that we have systems that are resilient, that are capable of operating in degraded environments, and that our soldiers are trained to do so. I'm confident that our soldiers' ability to operate in a degraded environment is improving. A couple of years ago, we started doing cyber operations against ourselves, out at the National Training Center. It's a very effective way to increase the training levels and the comfort of our soldiers to operate in those environments.

So, it's not going to be a perfect world. Combat's not a perfect environment. It's a very lethal environment. It is something that we'll have to adapt and overcome the ability of operating in a degraded electronic warfare environment. There's no question about it.

Senator COTTON. Thank you General, my time is expired.

Senator INHOFE. Senator Rounds, presiding.

Senator King?

Senator KING. Thank you, Mr. Chairman.

I also have to go to vote, so I'm going to be quick with my questions.

I think, to follow up on Senator Cotton's questions, Are we training our troops now with compasses and maps, just as at Annapolis, after a 20-year gap, they're now teaching how to do celestial navigation? In other words, are we specifically training for the failure of the GPS system?

General MILLEY. Yes.

Senator KING. That's a very succinct and—that's the answer I hoped I would get.

Dr. ESPER. We are reinforcing, Senator, the importance of doing that in training scenarios, in training activities, that you have to be prepared to operate without communications, without electronics across a range of specialties.

Senator KING. Good. I think one of the most important things that's going on now is the Army Futures Command. I guess my question is, Should that be a four-star in order to give that person sufficient authority to do the kind of coordination and pulling together of authorities to make it work?

Secretary?

Dr. ESPER. Yes, sir. We believe so. Not just that, but the Army Futures Command is envisioned to be a peer institution to the other four-star major commands. That's Army Materiel Command,

TRADOC [Training and Doctrine Command], and Forces Command.

Senator KING. I think that's important, because there's going to be some important turf battles, I think, going on there, and I think it's important that the authorities be equivalent.

Secretary Esper, this isn't a hostile question, but it's a challenging question. You talked about acquisition. The Army doesn't have a very stellar record in the history—in recent history, in terms of acquisition. You talked about, "We're going to do it better." Why? What—why—the people that didn't do so well before weren't bad people, and they were doing their best. What are—what is changing, systematically or structurally, in order to give you the assurance that we're not going to have some of the disasters that we had in the 1990s?

Dr. ESPER. Yes, sir, it's a fair question. Needless to say, we have taken a hard look at what experts have said in the past who have revealed—reviewed Army programs. We have studied reports, such as the Decker-Wagner report. We've had officers working on this for a couple of years. We know that one of the fundamental problems with the current big-A acquisition system is lack of unity of command and unity of effort. In other words, we have piece-parts of the acquisition system spread across multiple commands and, in some cases, not under a specific command. So, the promise of Army Futures Command, in one aspect, is to pull them under, get—pull them all together under a single commander, who can manage everything from what he or she believes the future threat environment may look like, to operational concepts, into materiel solutions, all the way through testing and evaluation and procurement. And so, you'd have that single chain of command. That's number one.

The other big problem has been a requirements process that has crept along, that has extended the timelines and costs——

Senator KING. Requirements creep.

Dr. ESPER. Yes, sir. And so, the—what the cross-functional teams are doing now, have been doing, and successfully, and we will—this will be imported into Army Futures Command—is to put all those stakeholders that I just described at the table up front, and to agree on what is a—what are the reasonable requirements that we know that we can achieve in a date certain that provides us overmatch, that the technology is sufficiently available to do, and move along that type of line. As technology matures, we will continue to incrementally approve—improve vehicles or systems, whatever the case may be.

Senator KING. Well, one way to make sure that happens is to build the initial platform in a modular way that—so it can be upgraded without having to scrap the whole platform.

Dr. ESPER. Yes, sir. We're doing that right now as we look at deploying a mobile SHORAD (short-range air defenses), in Europe in the next couple of years. We've already decided on a chassis to do that, and we're working on the effectors. But, one of the things, as I've talked to the CFT [Cross Functional Training] lead on, is to make sure that you build sufficient size, weight, and power into that vehicle so that, as the technology matures, for example, we could put lasers on it, because lasers provide an unlimited magazine, if you will, at very minimal cost to do that.

Senator KING. Well, I'd like to follow up with you offline, because, just the number of hearings that we've had, there are lots of lessons. I think it's so important to try to avoid some of those issues that have plagued us in the past.

Dr. ESPER. Yes, sir.

Senator KING. I appreciate your attention.

General Milley, my understanding is that the increases that have taken place in your funding in the last few months are going almost entirely to capital and not to personnel. Is that accurate?

General MILLEY. In terms of modernization and putting it into, you know, remanufacturing of the helicopters or new helicopters, new aircraft—is that what you're talking about, Senator?

Senator KING. Well, just that the increase—the increment of increase——

General MILLEY. Yeah.

Senator KING.—is going into capital improvements rather than manpower and other——

General MILLEY. Well, we've taken the additional monies, and we're putting it in modernization.

Senator KING. That's my point.

General MILLEY. Yeah. Into—absolutely, modernization, because modernization—we, the Army, took a modernization holiday in the last 16 years. We've been fighting a war, we've been consumed with current operations in Iraq and Afghanistan and elsewhere. Our modernization has lagged behind significantly. So, we're trying to redress that and dig ourselves out of that hole. That's really—in part, is the reform of AFC, but we are shifting monies——

Senator KING. But, we have to realize that——

General MILLEY. Yes.

Senator KING.—that there are still unaddressed issues on the personnel side.

General MILLEY. There are. But, we are increasing by 4,000—this budget, 2019 and 2018, is an increase of 4,000 personnel. We have a steady growth in the military personnel, of 4,000 a year. And we—we're shooting to get north of 500,000—or 500,000 in the regular Army. We'll cap out at about 343-five in the Guard and at 199 in the Reserve. So, in terms of military end-strength growth, there's a gradual modest growth in order to fill the holes in the existing units, but we think we needed to shift additional monies into modernization. That's the need.

Senator KING. I understand.

Thank you, gentlemen. I want to thank you particularly for the progress that you've made, both of you. It's, I think, quite remarkable, necessary, and I just hope that we can see it maintained. I look forward—I'll have some questions for the record, and, Mr. Secretary, talking to you about the acquisition process. We've got to get it right this time.

Dr. ESPER. Absolutely.

Senator KING. Thank you.

Thank you, Mr. Chairman.

Senator ROUNDS [presiding]. On behalf of the Chairman, Senator Graham.

Senator GRAHAM. Thank you.

I want to echo what Senator King said. Bottom line, I think you all make a heck of a team for the Army. Hats off to you. You've been in a bad spot, and we're trying to dig out. I appreciate both of your leadership.

So, let's talk a little bit about Syria, because it's sort of the hot topic. The President said that Assad is an animal who killed innocent children by using chlorine gas, and maybe some other form of gas, and he is going to pay a big price. Do you agree with that statement, Mr. Secretary, that Assad should pay a big price?

Dr. ESPER. Senator, it's something that, you know, is a—my responsibility is for title 10, making sure the Army is organized, trained, and equipped. It's something that is—it obviously is playing out in real time. So, I would, at this point, defer to SECDEF.

Senator GRAHAM. General Milley, do you agree with that statement?

General MILLEY. Absolutely yes.

Senator GRAHAM. Okay. Thank you.

General MILLEY. No question he should.

Senator GRAHAM. So, do you agree with the following. If Assad doesn't pay a big price, we will, because we have now challenged him.

General MILLEY. Well, in—you know, Assad or any others——

Senator GRAHAM. Once you challenge somebody——

General MILLEY.—unanswered aggression leads to more aggression.

Senator GRAHAM. I couldn't agree with you more. The only thing worse than war is losing a war. And——

General MILLEY. That's right.

Senator GRAHAM.—you said that.

General MILLEY. That's right.

Senator GRAHAM. So, the President, I think, rightly said that, "Enough is enough when it comes to Assad. You're a war criminal, by any definition, and a big price." Do you think a big price should include that he'll have less capability to gas people in the future?

General MILLEY. I think his ability to use chemical munitions on the innocent needs to be significantly degraded.

Senator GRAHAM. Do you think he's a legitimate target, given what he's done?

Assad?

General MILLEY. I'll not answer that question in public at this point.

Senator GRAHAM. Okay, fair enough.

I just hope a big price, when it's all said and done, that Kim Jong-un says, "Hey, that was a big price." I hope that the Iranians believe that Assad paid a big price, the Russians believe that he paid a big price. I hope they start paying a price for supporting Assad. Because the President's right to say he's going to pay a big price, given the fact that he's killed 500,000 of his own people, disrupted the entire Mid-East, and is a war criminal, by any measure. The question of whether or not it's a big price is yet to be determined. I would say this. If, after saying that, he doesn't pay a big price, America will pay a big price.

Residual forces. Do you support leaving residual forces in Iraq, if the Iraqis would agree, to make sure ISIS doesn't come back, General Milley?

General MILLEY. I think we need to continue to sustain our level of effort in order to achieve our national security objectives, which have been——

Senator GRAHAM. Would it——

General MILLEY.—clearly stated.

Senator GRAHAM.—include a residual force?

General MILLEY. Well, I think the Iraqis—absolutely, because I think the Iraqis——

Senator GRAHAM. Yeah.

General MILLEY.—need continued support, so you—you don't see——

Senator GRAHAM. Sure.

General MILLEY.—the return of ISIS. That's important. We——

Senator GRAHAM. Well——

General MILLEY.—learned this lesson in 2011. We don't want to learn it again.

Senator GRAHAM. Well, that's right. It's in our national security interest to make sure we don't do this twice.

Syria, we have a couple thousand troops training the Syrian Democratic Forces and doing operations against ISIL. Do you think that's in our national security interest, to have that presence?

General MILLEY. I believe it's in our national security interest to destroy ISIS——

Senator GRAHAM. Right. And——

General MILLEY.—absolutely.

Senator GRAHAM.—make sure they——

General MILLEY. That's what——

Senator GRAHAM.—don't come back.

General MILLEY.—we're doing.

Senator GRAHAM. And make sure they don't come back.

General MILLEY. That's correct. And——

Senator GRAHAM. Do you think it's in our national security interest to counter the Iranian aggression throughout the Mid-East?

General MILLEY. I do.

Senator GRAHAM. Okay.

As to all these things that we're asking you to do, do you think it's in our national security interest to maintain troops in Afghanistan?

General MILLEY. I do.

Senator GRAHAM. All right.

So, the bottom line is, Russia is on the prowl, China's making it difficult for us in their part of the world, and only God knows what's going to happen in North Korea. Bottom line is, the budget we just passed, how much of help has it been to the Army?

General MILLEY. In my view, it's enormous help—enormously helpful. Again, what I mentioned earlier, it can't be one-and-done, though. It—you can't dig yourself out of a—an 8- or 10-year trough in readiness and modernization, which was getting consumed with current operating—we can't do that in just two budgets.

Senator GRAHAM. Do you agree with that Mr. Secretary?

General MILLEY. This has got to be sustained over time.

Senator GRAHAM. Do you agree with that?

Dr. ESPER. Absolutely. What we're getting n 2018 and what we'll see in 2019 is tremendous. We thank the Congress. But, it will take many years to get to the readiness level and then get to the next generation of technologies we need for the future fight.

Senator GRAHAM. Yeah, I couldn't agree with you more.

In 2011, CBO [Congressional Budget Office] projected that military spending in 2018 would be 801 billion. It's 700 billion. In 2010, nondefense spending was 611, today it's 589. So, these are just facts. Sequestration's cost us a lot.

So, is it fair to say that the Congress needs to understand that we're making progress, but we're a long way—long away—long's way away from actually fixing the problem caused by sequestration? Is that true, General Milley?

General MILLEY. In my view, I think that's accurate. In terms of the readiness and modernization of the United States Army, I think that's true.

Dr. ESPER. Yes, sir.

Senator GRAHAM. Thank you.

Thank you both for your service.

Senator ROUNDS. On behalf of the Chairman, Senator McCaskill.

Senator MCCASKILL. Thank you very much.

Thank you both for your service. We are glad that you are there.

As you both probably are aware, I've spent a lot of time on this committee talking about contracting. I want to really drill down on some contracting issues in my time here this morning.

I began some oversight on the Legacy Program, beginning way back in October of 2012. As you all know, the Legacy Program is a very expensive American effort to build the intelligence capacity of Afghanistan and Iraq.

We are now very engaged in an investigation into parts of this contract. I have sent a lengthy letter, in August of last year, to Secretary Mattis requesting a lot of information that we—through both SIGAR and Robert Portman and I, we have all been asking for more oversight on this. We learned that, in August of 2017, that there was a nonpublic DCAA [Defense Contract Audit Agency] audit of the subcontractor, New Century Consulting. This audit, we know, includes questioned costs amounting to over $50 million, including Bentleys, Alfa-Romeos, assistant salaries of $420,000. It is—you know, it's so discouraging to me, after all the work we've spent on contracting, after all—after the War Contracting Commission and all the reforms we've done in contracting, that we have not yet figured out how to get at these abuses, close in time and close to the source. I don't even think leadership finds out about this until it's way too late. We're always engaged in the clawback process.

So, I have been on this for awhile, and I would like a couple of things that we're not getting right now, and I'd like to bring them to your attention.

One of the things that we would like is a full list of contracts and subcontracts in which New Century Consulting is still engaged in. We would also like the NCC performance assessments. Now, we're being told we can't get the audit because the audit agency is worried that, if they publicly disclose some of the audits, that that

would discourage contractors in the future because their financial information would become public. I think we can get around that, and I think we've got to figure out a way to get all this information out. Because if I just don't embarrass the hell out of you guys, I don't know how we're ever going to stop this stuff. Ultimately, what—I'm not going to issue this investigative report until I figure out who was seeing this stuff and not saying anything, who on the ground.

Which brings me—Secretary, when you were here on your confirmation, you know I talked to you about the IG [Inspector General] report, the DOD IG report, in terms of top management challenges. Ironically, the DOD IG, no surprise, had overseen contracting officers' representatives was one of the biggest challenges, and assessing and reporting on contractor performance was one of management's biggest challenges.

Can you give me some good news, Secretary, as to whether or not you've now digested this report and whether or not you, along with General Milley, are actually strategizing how we can—I mean, we've made progress on CORs, because when I went to Iraq in the beginning, it was clear that a guy was just getting a clipboard. I mean, all that stuff with LOGCAP [Logistics Civil Augmentation Program] and all of the abuses with the cost-plus, that was really sitting at the feet of a very ineffective CORs training and assessment program. When those—the contracting representatives that are right there on the ground that see what's going on.

So, give me some good news about how you view this problem. Please tell me that a Senator 20 years from now is not going to be sitting here and going, "How in the world are taxpayers paying for Alfa-Romeos and Bentleys?"

Dr. ESPER. Yes, ma'am. You're correct. You know, after you raised the issue with regard to the contracting, with regard to aviation, I think it was 2,000 separate contracts amongst hundreds of contractors for hundreds of millions of dollars, and, in many cases, for the same parts at different prices, I went back and went through that report. I've discussed it with folks internally. I will tell you, in the 4 months I've been on the job, I have met with Contracting Command twice, as recently as 3 weeks ago. I've had a conversation with my senior acquisition executive. It's something that General Milley and I recognize is a challenge. The head of Army Materiel Command is all this week. We recognize that, as the—as that report outlined, is, we need to have clear metrics and hold leaders accountable for meeting those metrics with regard to accounting—contracting, I'm sorry.

One of the reform initiatives we're pursuing right now is to—is aimed to reduce the number of contracts, reduce that process. We're looking at savings of possibly over a billion dollars over a multiyear period. But, there's a lot more work we need to do with regard to this. It's—we just don't have—we have to be good stewards of the taxpayers' dollars, and that means reform includes, certainly, contracting.

Senator MCCASKILL. Well, I look forward to having a meeting. And you've been kind and tried to reach out to my office, have a meeting. When we have that meeting, let's talk about these contracting representatives——

Dr. ESPER. Yes, ma'am.

Senator MCCASKILL.—on the ground, and what next step we need to take to augment their ability to be the eyes and ears. I won't regale you now, because I'm out of time, with all of the time and energy that has been spent on this.

General, if you could help get this information that I've asked for, I would really appreciate it. I think——

General MILLEY. We will get you the information.

[The information referred to follows:]

[The documents received will be retained in the committees files.]

Senator MCCASKILL. Thank you so much.

General MILLEY. What you're describing is unacceptable, smacks of corruption and criminal activity. It's unacceptable, and the people are going to be held accountable.

Senator MCCASKILL. By the way, we keep doing business with them. This goes all the way back to the alcohol at a party.

General MILLEY. I got it. We owe you answers.

Dr. ESPER. I would just add briefly, I had a good meeting with the head of GAO [Government Accountability Office] a couple of weeks ago to talk about a number of issues, past reports, along the same lines you raised. We made a commitment to work together to help us look at issues and solve them. So.

Senator MCCASKILL. Thank you very much.

Senator INHOFE [presiding]. Senator Rounds.

Senator ROUNDS. Thank you, Mr. Chairman.

General Milley, I commend the Army for already reaching full operational capability on the fielding of Cyber Force ahead of the October 2018 requirement. Can you share the lessons learned on that process and from the Army's experimentation with placing offensive and defensive cyber capabilities down to the brigade combat team level? And also, would you share your perspective on integrating artificial intelligence to enable both superior performance and security of Army networks?

General MILLEY. I'd say, really, two or three things, here, on the cyber piece of it. First of all, we have a lot—even though we've achieved FOC [Full Operational Capability] we have—on our objectives that we stated, in terms of our organizations and our capabilities, the cyber protection teams and the offensive teams, there's still more growth, and that's a big growth industry. Cyber is an area, a domain of warfare that is going to require us to continue to grow in the out years. So, we're not really done, even though we've achieved FOC for the stated objectives that you're referring to.

Some of the key lessons learned. I think one of the biggest lessons learned is to empower the youth. You and I and probably most in this room are essentially digital immigrants into a world in which we are really semi-familiar with a lot of the digital technologies that are out there, but these young soldiers and sailors and airmen and marines that are coming into the force, they're digital natives, and this is all second nature to them. So, it's best to arm them, equip them, and listen to them as they create the capabilities and the forces that are going to be required in this new domain of war. That's probably the biggest lesson. We've embedded

them into the units, the tactical and operational units, and we also have ones at operational and strategic level, as well. But, the tactical-unit ones are doing tremendous work. We're learning a lot more about the vulnerabilities of our systems and how to make them more resilient. But, I think the biggest single lesson learned is, listen to the young, on this one. This is one where they have far more wisdom than the rest of us.

Senator ROUNDS. These young people are vital to the long-term security defense——

General MILLEY. No question.

Senator ROUNDS.—in our Nation.

General MILLEY. That's right.

Senator ROUNDS. We want them to stay in the Army. We want them to feel like this is a good profession for them and that there is a place for them, long term. Fair enough?

General MILLEY. Absolutely.

Senator ROUNDS. Part of that—I'm going to ask your personal opinion now, and part of it's because I think you do listen to these young people coming in—what's the scuttlebutt on TRICARE?

General MILLEY. TRICARE is a very large capability—insurance capability that takes care of our soldiers. I am, as well as my family, recipients of that, and have been for years. There are—like there are with any large system, there are bureaucratic issues sometimes with it. I will tell you that, on balance, TRICARE is an effective system for our soldiers. There are areas, though, of improvement that we need, in terms of its responsiveness to people. But, on balance, it's not a bad system at all.

Senator ROUNDS. Part of the challenge is, is making sure the claims get paid on time.

General MILLEY. That's right.

Senator ROUNDS. Are they getting paid on time?

General MILLEY. I'd have to look at the exact statistics, but I have not heard—I don't have any evidence that there's any wide disparity of being paid on time.

Senator ROUNDS. Thank you.

You know, one of the other items that I think a lot of these young people appreciate is the fact that they don't get paid a whole lot of money, and they want to make that money go as far as it possibly can. We provide, on bases, the commissary.

General MILLEY. Right.

Senator ROUNDS. Do you think those commissaries are valuable to the young people that are coming in?

General MILLEY. My professional opinion is yes, because the commissary—you know, food is one of your big—bigger household item expenditures—housing, food, medical, education, those sorts of things, but food is a big one. So, a family of four—our demographic is, the majority of our soldiers, well over 50 percent, are in the E4–E5 range, they're in the 26-27-28-year-old range, and they are—about 60 percent are married, and, of those that are married, on average, there's two children. So, you—on average, you know, the bulk of the Army is about a family of four. A family of four, on average, their monthly food bill is several hundreds of dollars. The commissary—use of the commissary knocks off a significant portion of that, in lieu of having to go to some commercial entity to buy

food every month. So, the commissary is a big benefit and advantage to the soldiers, sailors, airmen, and marines out there, in my view.

Senator ROUNDS. Do you think that those young people coming in, the ones that we want to keep in—do you think they feel that the commissary system is working to their benefit today?

General MILLEY. I think so, yes. I think the commissary is one of those areas where you almost universally get positive comments, in terms of the cost, performance, the quality and diversity of goods that are sold there. Commissary gets pretty high marks.

Senator ROUNDS. Very good. Thank you.

Thank you both for your service to our country.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Rounds.

Senator Warren.

Senator WARREN. Thank you, Mr. Chairman.

Thank you, to our witnesses, for being here.

I'd like to follow up on an issue that really hits a nerve in my home State. Secretary Esper, during your confirmation hearing, you may remember that I asked you to look into complaints from National Guard officers about delays in Federal recognition of their promotions. According to the National Guard Association, many Guard officers are waiting 200 days or more. This can have a really negative effect on their pay, on their benefits, on their command opportunities.

So, Mr. Secretary, what have you found, and what actions is the Army taking to address this issue?

Dr. ESPER. Yes, Senator, thank you for that question.

After we did have that during—that exchange during the hearing, I spoke to the TAG [State Adjutant General] of the Massachusetts Guard, and then, about 4 weeks ago, met with all 54 TAGs at the Army National Guard headquarters, and this issue came up again. I took it back and had a meeting with my Manpower and Reserve Affairs personnel, and you're right, the numbers are too long, and it's unacceptable. And, frankly, I endured—my time in the Guard, I had a similar type of action, you know, happen to me.

So, what we're doing is, we're digging through it right now. Part of the challenge is, there are multiple steps. The process begins at the State TAG level, goes through NGB——

Senator WARREN. Yeah.

Dr. ESPER.—the G1, all the way through, and, in some cases, the Senate, if it's a colonel, above. There are things we need to do to improve the process. We have added additional manpower. We're looking at greater automation. I think there are ways we can reduce the time. There's about—anywhere from 30 to 45 days added on to determine if they have exhibited exemplary behavior. Then there are other things out there that may require congressional action. For example, part of the process, as I understand it, is the scrolling, which is an antiquated pen-and-paper process that also adds time to it. So we're trying to attack it on a number of fronts, but we need to—it needs to be much, much more timely.

Senator WARREN. Okay. Well, I really do appreciate your working on this. I'm going to keep pushing on this.

You know, I understand the need to thoroughly vet our officer corps, but this has become a morale issue for the Guard. I don't think it's right to make our junior officers pay the price for bureaucratic delays and antiquated systems, regardless of where those delays originate.

So, let me ask you another question on this. Would you support providing back pay to the guardsmen whose promotion sits idle for months while they're waiting for Federal recognition and actually doing the next-level job?

Dr. ESPER. Senator, I think that's a fair approach to it. As I discussed with you, I would want to make sure I talk to National Guard, make sure it's fair to them, we all understand what the implications are. But, I think, in principle, that's fair.

Senator WARREN. Good. I'm glad to hear that. You know, these young men and women who volunteer to serve their country don't get paid all that much, and I think it's just plain wrong when National Guard officers earn their promotions, serve at a higher level of responsibility for months, and then don't get that rank's pay while they're waiting for Federal recognition of that. We've got to find a way to speed this up and—or else I worry that it really is going to do a lot of damage to morale.

Dr. ESPER. I do, too, Senator. The National Guard has become integral to our operational readiness. They're serving around the world now in support of real-world activities. I was with the Guard in both Poland and in Ukraine in January, doing a fantastic job. So, we need to fix these things. And not just—we have similar problems in Reserves and the Active side, as well. It's just—to get the bureaucracy out of the way and make the system much more efficient.

Senator WARREN. Good. I'm really glad to hear that.

With my remaining time, what I'd like to do is follow up on Senator King's question. The Army has announced plans to establish a new Futures and Modernization Command. The idea is to bring people who need new technology and the people who acquire that technology together under one roof so they can get the technology into the hands of our soldiers faster. But, today a lot of the cutting-edge technology is not developed within the Pentagon, but in the commercial sector or in laboratories at our colleges and universities.

Secretary Esper, how important is it to capitalize on commercial and academic developments in advanced technology? Here's the key. As the Army establishes this new command, what steps are you taking to make sure it is closely tied to outside innovators?

Dr. ESPER. Yes, Senator, you're right, Army Futures Command, it's critical that we have access to talent, to talent, not just on the material side, particularly with the hard sciences, but also talent that can help us think about the future strategic environment, thinking in the 2030s–2040s, because that will inform, in many ways, the steps we take with regard to materiel.

So, we are looking at a number of locations. I think we started out with around 150. We've winnowed it down to around 30, and I think the next step, in a week or so, will be to get it down to 10, 11, 12. But, each time we go through this, we look at different filters, whether it's talent, it's then specific areas of talent, it's the

proximity to innovation, it's proximity to academia. Then, there are other issues, of course, that we have to look at—quality of life, cost of living, all these things. So, we're really trying to be smart about it. We want to make sure we can attract the top talent, we can—we have access to an ecosystem of talent, where we put it. That's why we're really trying to get into a—into an area that really offers much of that.

Senator WARREN. Well, I'm really glad to hear that the Army is focused on taking advantage of existing talent and where technological innovation is occurring. Of course, General Milley and I both come from a State where a lot of that is going on. I know you've lived there, Secretary Esper. Anytime you want to come to Massachusetts and look around, you're welcome.

Dr. ESPER. Thank you, ma'am.

Senator INHOFE. Thank you.

Senator Peters.

Senator PETERS. Thank you, Mr. Chairman.

Gentlemen, thank you for being here. Thank you for your service to our country, as well. We appreciate having you before the committee.

Secretary Esper and General Milley, I'd like to ask about the Army's plans for production of the Stryker vehicle. I understand that the Army intends to produce Stryker A–1s, which include both improved protection of the double-V hull and improved mobility and the power provided by engineering change proposal number 1. But, I'm concerned that the current budget request for fiscal year 2019 doesn't seem to provide for converting the Army Stryker brigade combat teams to modern Stryker A–1s quick enough. Getting them out in the field seems to be important, particularly with new threats emerging around the world. Could you please give me an update on the Army's plans for production of the Stryker vehicle?

Dr. ESPER. Yes, sir. We are looking at, like you said, improving the survivability by adding the double-V hull. We're looking at improving lethality by adding the 30-millimeter gun and some antitank weapons. I had the privilege of actually seeing a Stryker when I was in Grafenwoehr, Germany, in January, walked around a vehicle, spent some time with the soldiers. They are very impressed with what they're doing. It will go through operational testing now for several months, and I think that we will make an assessment with regard to its performance. All the feedback now is good.

I would note, in terms of procurement, we've increased about—over 18 percent over the fiscal year 2018. So, it's something that General Milley and I are watching closely, but, you know, the commitment is to make sure we improve the survivability and lethality of all these vehicles as we look at, you know, this great-power competition that we're in now.

General MILLEY. As you're aware, Senator, the—you know, we are putting money against it, but we're also—it's a balance right now. So, for the Bradley, the Abrams, and the Stryker, these systems were designed and came online many, many years ago. Now, they've had various upgrades and improvements over the years, but they are products of technologies and ideas that come out of the 1960s and 1970s, vice today's world. So, the next-generation combat vehicle, ground combat vehicle that we're working on, it's

in the R&D and S&T phases, and the prototyping, et cetera. That will eventually replace the entire family of vehicles that we have.

The Abrams, Bradley, and Strykers, realistically their lifespan is probably 10, maybe 15 years. So, we are putting improvements in double-V hull, lethality, and some other things, but what we really need to do now is to make the shift, in money and investments, to a next-generation combat vehicle, and that's what we're doing with our modernization accounts.

Senator PETERS. Well, speaking of the—or the next combat vehicle, could you please talk a little bit about—or at least give us an update on the prototyping effort, which is something different that seems to make some sense?

General MILLEY. Yeah, the philosophy or the methodology, we've shifted in—and we're incorporating much more prototyping, which will crunch down the amount of time it takes. There's a long lead time to the Army acquisition process. It's very linear. It's step-by-step. It's left-right or left-right or left-right or left, down the line. So, what we want to do is accelerate that by bringing in prototypes.

In terms of the next-generation combat vehicle, one of the things that we're accentuating in it, it must be optimized for urban operations, which our current families of vehicles are not. It must be optimized so that it can be both manned and either autonomous or semi-autonomous, robotic, depending on what the commander chooses to do at the time in the situation in the battlefield. Those are significant radical changes to the current system or family of vehicles.

So, there are companies, there are corporations and industries out there, that are already producing robotic vehicles. We are modifying them, and we are prototyping them. We have several experimental prototypes going on right this minute that are showing some promise. We're not there for down-selecting or picking vendors or anything, but we are experimenting with the various technologies. We think that, by 2028, we should be able to begin fielding a next-generation combat vehicle that's optimized for urban operations, that's both—either manned or unmanned for ground operations, that has lethality, power, speed, weight, that's optimized for the next generation of a battlefield that we perceive. We think we'll have that fielded inside of 10 years, which, under current Army practices, would take 15 or more.

Senator PETERS. Yeah, and as mentioned in a previous question, a great deal of this work is being done on the civilian side. Obviously, I'm very involved in self-driving vehicles, from Michigan——

General MILLEY. Yes.

Senator PETERS.—and what's happening in the auto industry. A lot of work is being done in Michigan, in TARDEC [Tank Automotive Research Development and Engineering Center], and other places.

General MILLEY. Absolutely.

Senator PETERS. You mentioned the next-generation vehicle with the autonomy features. Do you see having two different variants, or will all of these capabilities be——

General MILLEY. There will be multiple variants. There will be a tank-like variant, there will be a infantry carrier-type variant, there will be logistics and medical variants. I mean, it's a family

of vehicles. It's not a single vehicle, but they'll be based off of common chassis and common engines and power packs and so on.

Senator PETERS. Well, my question related to those variants. Will they all have autonomous capabilities——

General MILLEY. Yes.

Senator PETERS.—or will some——

General MILLEY. Every ground and rotary wing vehicle that the United States Army produces from now on, the next generation, after Bradley, after Abrams, every single one of them has to have the base requirement. It has to be either manned or unmanned, robotic—either fully autonomous or semi-autonomous, built into its very basic requirement. It has to be able to have that option so that the commander on the battlefield of the future has the option, based on mission and enemy and terrain and time and troops available, to pick whether he wants this objective to be seized with manned vehicles, or not, and it depends. It depends on the situation sort of thing at the moment in time. But, we want that option to be available to company commanders, battalion commanders, brigade commanders in the future. So, the requirement for all vehicles, in the air or on the ground, is both manned and unmanned.

Dr. ESPER. Senator, to be clear, we're looking expansively. It's—it is beyond combat vehicles, as the Chief just alluded to. So, for example, within this year, the 101st will be experimenting with an unmanned squad support vehicle. I'm talking to our senior acquisition executive about unmanned trucks so we can transport, you know, supplies. We hope to accelerate that, as well, so we could be experimenting in the next couple of years with regard to, you know, unmanned sustainment, logistics support.

Senator INHOFE. Senator Tillis.

Senator TILLIS. Thank you, Mr. Chairman.

Gentlemen, thank you for being here, and for your service.

General Milley, thank you. Actually, for the 3 years that I've had the opportunity to get to know you, the only thing I don't like about you is, you're a Patriots fan. But, I thank you for your generous time in the office the—yesterday.

Just a quick update. You and I talked. I think it bears repeating. Talk a little bit about what it means to become a more lethal force, and, you know, in, hopefully, a limited amount of time. I've got one, two other questions. But, I think running through that's very important.

General MILLEY. Well, just briefly. I mean, the way I look at it is, you evaluate an organization, both based on its individuals, but also on its collective capability, and we look at the training, the equipping, the manning, and the leadership.

So, for training, we want to make sure that a lethal force collective entity—a squad, platoon, company, et cetera—has got many, many reps at their basic mission-essential tasks. Not one or two reps, but hundreds of reps, if not thousands of reps. That's what makes the Patriots a great football team, is because they do it thousands of times before they win, except against the Eagles. So, the—but, reps matter. Reps matter. So, one of the things, the initiatives we're doing, is a synthetic training environment, which will give leaders and collective units thousands of reps, relatively cost-

free, without going out into the field. So, training's important, lots of reps. That applies to the individual, as well.

In terms of equipping, to make sure that, not only do you have the right amount of equipment on hand, but that equipment works, so spare parts and the maintenance of that equipment so it's fully operational. We want to make sure that that organization has the most modern equipment that is available, really, that money can buy.

In terms of your manning levels, we don't want units going out to training at home station or at the Combat Training Center at 75 or 80 percent fill. We want them going out into the field to train at 90, 95, or 100 percent, or even more, to train, because they get the full benefit of the collective training experience.

The leadership is key. We want leaders who can operate in intense environments, middle of the night, smoke's going on, bombs are going off, people are screaming and bleeding right next to you, and yet you can still make incredibly complex and difficult decisions under intense pressure. They can be morally correct decisions, ethically correct decisions, and tactically correct decisions. You can do that in unbelievable pressure. That's what it takes in a modern environment, but that's the same type of leaders that it took in World War II, at Normandy, or Iwo Jima and the Korean War and Vietnam, and so on.

So, that's what—increased lethality. It's the combination of training, equipping, manning, and having excellent leaders that are up to the task, units that are fit, they're able to shoot, move, communicate, protect themselves, and sustain themselves.

Senator TILLIS. Do either of y'all think that sequestration's going to be helpful to achieving that increased lethality?

General MILLEY. No, it'll kill it.

Senator TILLIS. I want to talk briefly about Futures Command. I believe that the Army Futures Command that Senator Warren made a—may have brought it up. I look forward to seeing you all go through the process in assessing the various States that may be the most hospitable to house that command. I know that you're going to start proceeding through the process over the next week or two. It's like I've said a number of times before, I will never fight for a dollar in North Carolina that can be better spent somewhere else. I look forward to that selection process being a level playing field, absent political pressure to go one place or another because of the jobs or economic impact. When we're constantly trying to fight to get you all more money, the last thing we can possibly do is satisfy the political pressure of any one person or any one delegation, when you know in your heart of hearts there's a better or more optimal place to put it. The States that are under consideration, the cities that are under consideration, have the onus on presenting the best possible case. And your onus is to make sure that whoever doesn't get it, should it be North Carolina, Massachusetts, any other State that you may be considering, that you've got a well-articulated reason for why whatever choice you had, based on the numbers, based on the empirical data, was the best place. I will heartily support that decision, regardless of where it goes. I obviously would like for it to be in North Carolina, but

only because it's the best and highest use of the limited dollars that you have.

General MILLEY. I can assure you, Senator, that Secretary Esper has laid out a rigorous process, it's totally apolitical, it's totally based on data and analysis, and that we are very rigorously and deliberately going through that and evaluating each location based solely on its own merits, with no political interference whatsoever.

Senator TILLIS. Thank you all very much for your service. We may submit a few questions for the record.

General MILLEY. Thank you, Senator.

Senator INHOFE. Thank you.

Senator Heinrich.

Senator HEINRICH. Thank you, Chairman.

Secretary Esper, I understand you'll be visiting White Sands Missile Range next week.

Dr. ESPER. Yes, sir.

Senator HEINRICH. So, I want to thank you for taking the time to visit that facility. I think you'll be incredibly impressed at the scale of the range, in part, which is very unique.

I want to ask, if you're able, if you might take a few minutes and quickly visit what used to be the old 2nd Engineering Battalion facilities. It's about $170 million worth of brand-new facilities at White Sands that is currently sitting vacant. At the very least, drive through that footprint. I think it'll give you a better understanding of the potential for hosting a security force assistance brigade at that site. So, if you would, I'd ask you to fit that into your schedule.

Dr. ESPER. Yes, sir.

Senator HEINRICH. Super. I very much appreciate that.

As you know, the full New Mexico delegation and local communities support the addition of that mission. I think one of the things you'll find at White Sands is that it's an incredibly safe community, with good-quality family housing, and, for that matter, one of the best schools in the State. So, it's a very attractive place for folks to serve.

General Milley, I was really glad to see the Army place a high priority on modernization, and the short-range air and missile defense, in particular, and was particularly impressed to see that General McIntire and the Army's new cross-functional team have accelerated some systems by up to 5 years. I think that's good news to all of us here who recognize, as you've said, that we've sort of taken a break from modernization for far too long. Do you believe that CFTs will be able to shorten the prototype development and fielding timelines for your modernization objectives? How are you seeing that come together?

General MILLEY. I do, I think it's coming together tremendous. I think that the process that we've put in place, the organization that we've put in place, and the governance or oversight we've put in place is very effective. I have no doubt that it's going to shorten the procurement and acquisition timelines. The Vice Chief of Staff of the Army, General Jim McConville, and the Under Secretary of the Army, Ryan McCarthy, are driving this, and these guys are driving it hard. They're sitting on top of the six cross-functional teams—there's actually eight, but two of them are embedded under

two others, so there's six total teams that are working—each of those six modernization priorities—long-range precision fires, next-generation future vertical left, and so on.

With respect to air missile defense and McIntire, he's doing a great job in driving that. You're correct, we, the Army, have been blessed by having the greatest Air Force ever known throughout the history of mankind, in that we, the Army, have not come under enemy fixed-wing air attack since the beaches of Normandy. If we get into a conflict with a great power, those days'll be gone. We will likely be under attack from enemy fixed wing. Our Air Force would again do a tremendous job, but we, the Army, must protect ourselves. So, air and missile defense is a critical capability to protect our unit formations, and it's a critical vulnerability right now. So, we want to speed that up as fast as we can. We're doing that. McIntire is leading the way, under the supervision of McCarthy and McConville. So, the three "Macs" are bringing it home.

Senator HEINRICH. Are you comfortable with how much the Army is budgeting towards RDT&E [Research Development Testing & Evaluation] funding to meet those modernization and testing goals?

General MILLEY. Well, from my perspective, I would always like more to put in there, but it's a balanced portfolio——

Senator HEINRICH. Sure, I get that.

General MILLEY.—and we think—the Secretary and I think that we have balanced it for the FY-—for this proposed budget, 2019, we think we have about the right amount. We've increased it—I think it's 8 percent or so, in terms of our R&D and S&T capabilities. So, we think it's balanced. It's not optimized, but it's balanced.

Senator HEINRICH. I very much appreciate that approach.

During the AUSA Global Force Symposium, General McIntire said that the first prototype platoon of Strykers equipped with directed energy weapon systems will be fielded by 2023, but that he'd like to move that timeline further to the left. What can we do? Is it just a matter of funding, or are there other things that we can do to assist with that? Because I think that's a very important development.

Dr. ESPER. I think, Senator, I'd have to look at whether it's the funding challenge, but there is a technology challenge, as well. That's why we're trying to work with the other services on that, and he's talking about fielding. We are trying to push hard to move left as quickly as we can. It does get to the bigger issue about sustained funding beyond 2019 to make sure we can make those big procurement bets at that point in time. But——

Senator HEINRICH. You know, Secretary, if anything, I finally see that we're turning a corner on recognizing just how far the technology has moved. Now it's more a matter of getting all of these technologies through the various processes——

Dr. ESPER. Right.

Senator HEINRICH.—working out how they're going to be used in the field. It's not so much a limitation, in my view, on the technology anymore, it's a limitation in how quickly we can——

Dr. ESPER. Yes, sir.

Senator HEINRICH.—work out the details of how they will operate in the field.

Dr. ESPER. Right. Our view is, don't make the perfect the enemy of the better. So, even if we get limited power at a limited range, we'll start there, and then we'll continue to upgrade as the technologies mature, and build upon it.

Senator HEINRICH. Look forward to working with you on that, Secretary.

Thank you both.

Senator INHOFE. Thank you.

Senator Cruz.

Senator CRUZ. Thank you, Mr. Chairman.

Mr. Secretary, General, welcome. Thank you for your service.

Secretary Esper, the capability gap separating the United States and its competitors, Russia and China, has reached a troubling inflection point. Over the past two decades, for a whole lot of reasons, the United States military hasn't been able to match the rapid pace of Russian and Chinese military modernization. Both nations are reaching parity in some areas once dominated by the United States, such as field artillery, reactive armor, air defense artillery, electronic warfare, and antitank guided munitions. Furthermore, the training and professionalism of the Russian and Chinese militaries have seen steady improvements, as well. That's why the recently released National Defense Strategy explicitly directs the United States military to prioritize the threats emanating from Russia and China. The NDS [National Defense Strategy] will have far-reaching implications for how the U.S. military trains, equips, and postures its forces. Each of the services will play a significant role in the implementation of the NDS, which requires new and innovative ways of conducting joint operations.

In light of the NDS, what does the Army see today as its primary mission?

Dr. ESPER. Our primary mission is to deploy, fight, and win the Nation's wars, Senator. As the National Defense Strategy has outlined in this era of great-power competition, our focus is on high-intensity, near-peer threats, possibly Russia and China—or namely Russia and China. So, that is our core focus.

Now, in addition to that, the NDS outlines the need to, of course, protect the Homeland, the need to preserve irregular warfare as a core competency. But, those two strategic competitors are our primary focus.

Senator CRUZ. How is the Army prioritizing threats posed by Russia and China, both in the context of weapons procurement, but also transitioning the mindset of our soldiers from a global war on terror to a more expeditionary posture?

Dr. ESPER. So, we have moved to focus on high-intensity conflict in our home-station training and our national training centers, particularly the National Training Center. When I was there in November visiting and the 1st Calvary was going through the training, they were actually facing scenarios that the Ukrainians saw in eastern Ukraine against the Russians—high-intensity use of drones, et cetera. So, training is one.

With regard to materiel, as we've outlined today, there are six modernization priorities that we think, if fully exploited, will ensure our overmatch in the out years. So, that's the second part of it. Again, we must, as the Chief spoke eloquently on earlier, con-

tinue to develop our leaders to make sure that they are prepared for the future battlefield, and train the soldiers, as well, so that they can fight along the entire spectrum of conflict, which well may—which well may mean that they don't have access to communications, electronics, et cetera.

Senator CRUZ. I'm also concerned about the modernization of our armored brigade combat teams, such as those at Fort Hood and Fort Bliss in Texas. Technology such as active protection systems and reactive armor have failed to keep pace with where Russia is currently. I understand the Army has started fielding systems like Trophy before deploying to Europe. What is the status incorporating APS systems like Trophy on our armored vehicles such as the Bradley or the Stryker?

Dr. ESPER. Senator, you're correct, we are looking to—we are outfitting some armored brigades with active protection systems. We're looking at the same with regard to Bradleys and Strykers. But, there are other things going on, as well. We're upgrading the Abrams tanks. With the budget we see in 2018 and 2019 will allow us to accelerate the upgrade of five ABCTs from 10 years to 5 years. And, of course, we are pursuing other ways to improve the survivability and lethality of these systems.

Senator CRUZ. Additionally, how are you working to ensure that our armored formations incorporate technology such as APS, FLIR, and other off-the-shelf technologies to keep pace with the threats that exist today?

Dr. ESPER. I would defer to the Chief here, as well—and this is one of the areas where the schoolhouses are looking at requirements for the future fight, certainly cross-functional teams, to make sure that we are incorporating whatever technologies are available to do that. Certainly with regard to communications we have pivoted now to looking a lot more at commercial off-the-shelf technology that we could ruggedize. I've seen that already with regard to how we are outfitting the Stryker and infantry brigade combat teams, and it's the only way we're actually going to be able to keep up with the changing pace of technology in the communications sphere.

Senator CRUZ. General, anything to add on that?

General MILLEY. Yeah, in the seconds remaining, I would just tell you that we are actively upgrading our Bradley and Abrams formations. But, as I mentioned earlier to a previous question, the Bradley and the Abrams came into service when I was commissioned as a 2nd lieutenant. They have served the Nation extraordinarily well, but they are fundamentally at the end of their lifespan. We'll probably get, max, another 10, maybe 15 years out of these vehicles. We have maxed out their weight, the technological upgrades that we can do. So, hence, the modernization program of a next-generation combat vehicle.

But, we are aggressively upgrading Abrams and Bradley and Stryker in all of our formations throughout the Army. I'm very confident that those weapon systems will continue to serve us well, even against a Russia or a China in the near term. Because, you know, armies don't go to war, nations go to war, and armies don't win wars, nations win wars, and we go as part of a joint force. So, it's not just the Army. It's the Army with the Marines, the Navy,

the Air Force, the CIA, and so on and so forth. It's the synergistic effect of all that combat power in time and space against the opponent, whether it's China, Russia, no matter what the country, that's what brings victory or defeat.

We do know that decision in war happens on the ground. We know that, because that's—war is part of politics, people live on the ground, and so on. So, it's important. The Army's contribution to that piece is critically important, that we have a decisive conventional capability that can conduct campaigns over extended periods of time to do combined arms maneuver and defeat the armies of the opponent, and then to take control of the land mass from the enemy army. That's the fundamental task of any army, and that's our task, as well. We're confident in our current capabilities, we're confident in our current systems, relative to Russia, China, or anyone else, for that matter. But, we are keenly aware of the modernization programs of both Russia and China right now, and we are keenly aware that we need to shift gears rapidly into the modernization in order to make sure that we don't have parity or that they don't close the gap or cross the gap.

We want a military, across the board, to be unbelievably lethal and unbelievably dominant so that no nation will ever challenge the United States militarily. That's what we want.

Senator INHOFE. Good——

Senator CRUZ. Thank you, gentlemen.

Senator INHOFE. Good statement.

Senator Hirono.

Senator HIRONO. Thank you, Mr. Chairman.

This is for both Secretary Esper and General Milley. Senator Cruz has touched upon the National Defense Strategy and how ready we are, but I want to focus on the Asia-Pacific area. China, of course, is a significant rival in the Pacific. It's important for the United States to project strength, reassure our allies, and build partnerships in Asia-Pacific, particularly in light of the actions of China and North Korea.

So, I have a series of questions for both of you. How are you resourced for mil-to-mil exercises in the Asia-Pacific region? How are you resourced to cover Army requirements in the region? Is the Army's force laydown appropriate to meet current threats? Does the Army envision directing additional assets to the Asia-Pacific area of operations?

Let's start with you, Mr. Secretary.

Dr. ESPER. Senator, I'll take a shot at the first question. One of the most important programs we have out there for improving interoperability and addressing training in the Pacific is the Pacific Pathways Program. The U.S. Army Pacific Commander has requested $61.8 million for that program in fiscal year 2019, and the Army fully funded it. So, I think we will continue to sustain that level of training and readiness as we look ahead.

With regard to disposition of forces, there are currently no plans to put more forces in the Pacific, that I'm aware of. I'll defer to the Chief if there is something else. But, really what we're focusing now is to make sure that we—the troops prepare, both at home station and through our training centers, for the high-end conflict, whether it occurs in Europe, Asia, or elsewhere.

Senator HIRONO. Chief?

General MILLEY. I would echo that, Senator, that our—we have a very wide variety of exercises in the Pacific that you're very familiar with. Pathways is one of those. We think we have adequate funding in the 2017–2018 series of bills, and we're requesting adequate funding in the 2019 series of bills. Those are really important that the United States Army remain continually engaged, because China, Asia-Pacific—Indo-Pacific, really—is the priority in the National Security Strategy and in the National Defense Strategy that Secretary Mattis has laid out for us. We think we have adequate funding and resources to do that. We have a considerable amount of Army forces, not only in your State of Hawaii, but up in Alaska, on the West Coast, in Washington, and forward in Guam, Japan, and Korea. So, we've got a good array of forces throughout the Pacific region.

Senator HIRONO. Well, there is a concern about the fact that the service deputies testified in the Readiness Subcommittee in February, and they all stated that nearly 70 percent of young people in the U.S. today are not qualified to join the military. Your fiscal year 2019 request calls for an increase in end strength of 487,500 regular Army soldiers. Will you be able to continue increasing end strength without lowering standards, giving the small pool of people who meet the current standards?

General MILLEY. The short answer is yes. I believe—we've done a lot of modeling and estimates on that—that we can increase our force by 4,000 or so each year that we've been shooting for. We've been meeting that, to date. I think we'll meet it in the future within lowering any standards. So, the key is standards. It's a standards-based Army. We're not going to lower those. I think we can meet the end strength.

As far as, you know, 70—and what the vices all said, 70 percent, that's a statistic that's been out there for a considerable length of time. That's well known and, we focus on those that do meet the standards, and we're not going to move the standards.

Senator HIRONO. Yes.

Dr. ESPER. I completely occur, and I would say, actually, in many ways, though, you know, we all face that same problem—we, being the services—in terms of how we attract youth. We are putting more money into recruiting and into other ways in which we can attract youth. The National Guard is doing the same, and so, it's a challenge, but we will not lower standards to bring a young man or woman into the service. In fact, if anything, we are raising standards and we are looking at—you know, for example, how can we extend either basic training or one station unit training to make sure that the product we put through is ready to go, that young man or woman, when they arrive at their first unit.

Senator HIRONO. Let me ask a question about cyber capacity, because that is an issue of concern throughout these services. Last month, General Nakasone testified about the success of the Army Cyber Center of Excellence that they—you are having in developing and training a cyber workforce, including the first class of enlisted cyber operators who graduated from the Army Cyber School last August. What percentage of soldiers trained at the Army Cyber School come from the Reserve and Guard components? Do you en-

vision growth in these numbers in the future? As the Army continues to successfully train cyber operators, how will that affect the Army cyber efforts across the service? Could the model—Army model employed at the Cyber Center of Excellence be scaled up to train other services or members throughout the Government?

Dr. ESPER. Senator, if I can, I mean, speak broadly, and then I'll get to one of your questions there. I—one of the things I was most pleased to find when I came into this role, about 4 and a half months ago, was how far the Army had progressed and what it had achieved with regard to cyber. So, we have a Cyber School, a Cyber Command, a cyber MOS, a cyber branch, and are doing really well with regard to bringing people in.

The goal was to have 62 cyber mission force teams. We currently have 41 in the regular Army and are building 21 in the Guard and Reserve. I was at the Guard Bureau a couple of weeks ago, and they told me that they are up to, like, 30 teams in the States, and building more. So, I think there is—we continue to grow. I think the Guard, the States provide good opportunities, because there's a lot of talent out there that is familiar with these skills, and they are working in the private sector. So, to bring them in as a guardsman is a great opportunity to capitalize on skills they already have.

Senator HIRONO. Do you want to add something before——

General MILLEY. It's—yeah. On the percentage, it's roughly a third. We can get you the exact numbers.

[The information referred to follows:]

In fiscal year 2017, the U.S. Army Cyber School graduated 1,020 soldiers. Of those, 28 percent came from the Reserve and National Guard. Specifically, 243 National Guardsmen (component 2), 43 Reserve (component 3) soldiers, and 734 Active duty (component 1) soldiers graduated from Cyber School courses. Thus far in fiscal year 2018, as of April 12, 2018, 26 percent of the Cyber School's graduating soldiers have come from either the National Guard or Reserves. Of those 380 soldiers who have graduated before April 12, 2018, 90 came from the National Guard, 7 from the Reserves, and 283 from the Active Army. Of the 278 soldiers still attending training on April, 12, 2018, 16 percent were from the National Guard and Reserves, with 28 from the National Guard and 15 from the Reserves.

General MILLEY. You were asking about other RC at the—that are getting trained.

In terms of growth, absolutely. The cyber is a domain of warfare—you know, land, maritime, and air, the normal three traditional ones, but now space and cyber. So, developing capable cyber forces in the joint force, in all of the services, is critical to our warfighting capability in the future. So, this is an area of absolute growth. No question about it, and we're very fortunate—and you know him well—General Nakasone has led the way for the Army, and done a great job there, and, of course, he's the nominee who will be taking command of CYBERCOM, here, shortly.

Senator HIRONO. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you.

Senator Perdue.

Senator PERDUE. Thank you, Mr. Chair.

Thank you both for your service.

General, I just returned from North Korea, and I just want to make a comment to you. I've been around high-performance teams all my life, and I have to tell you, General Brooks and your team

over there is absolutely the best of the best. I want to thank you for the training and the preparation of those young men and women over there. I was really proud to be surrounded by them. So, please pass that message along, both of you.

General MILLEY. Will do, Senator.

Senator PERDUE. You've got about 24,000 soldiers over there. I think this—the National Commission on the Future of the Army recommended that the Army consider forward deploying a combat aviation brigade in Korea in order to bolster the aviation readiness on the peninsula. This spring, an Army—as you mentioned, I believe, earlier—an Army tank brigade, the 1st Brigade 3rd Division, I think, from Fort Stewart, deployed to South Korea to deter potential aggression over there and to make sure people around the world know we're serious. Can you give us an update on the forward-deployment strategy with regard to Korea, as you can—as you best can in an open conversation like this?

General MILLEY. Yeah. As you know, we've got 28,500 U.S. military personnel. Of those, 24,000 to 25,000 or so are U.S. Army.

Senator PERDUE. Sure.

General MILLEY. We rotate an armored brigade combat team, as you noted, through there on a regular basis. They go over there for a deployment. That's a heel-to-toe rotation. That's a critical capability that's necessary in order to deter North Korean aggression. In addition to that, we've got the headquarters of the 2nd Division, we've got artillery capabilities, we've got ballistic missile defense, with Patriot and THAAD [Terminal High Altitude Area Reserve], forward deployed. We've got appropriate sustainment and intelligence capabilities and a variety of other capabilities built within that 24,000 soldiers.

As you know, the situation on the Korean Peninsula is dynamic right now. We've got a very important strategic-level summit meeting between the President and Kim Jong-un coming up, here, shortly. Right now, the U.S. strategy is to maintain maximum pressure, and if—and to continue our capability to deter, and we'll see what develops in the diplomatic realm. The main effort is clearly to resolve our issues with North Korea through peaceful diplomatic means, but to retain the capability and—for the options to be presented to the President if diplomacy does not work.

So, that's what we're doing. We're maintaining our maximum pressure. We're maintaining our readiness. We're keeping those forces, under General Brooks, at a very, very high state of readiness.

Senator PERDUE. Yes, sir, thank you.

Mr. Secretary, you both have spoken to the five domains, and the growing domains of space and cyber in addition to maritime, land, and air. We've been getting these cyber briefings, in the Subcommittee on Cyber, and I have to say it's very sobering. In an open environment like this, though, there are some concerns that we can discuss relative to the integration. I know we have one approach for the Government, but when we look at the services—and this is your responsibility—talk to us about the integrated efforts between the services so that we don't—so that we have best practices—we share best practices and we also have a concerted effort

that can efficiently compete with the absolute rapid development in both China and Russia.

Dr. ESPER. Yes, sir. This is a—an area of focus, as well, for all the concerns you outlined. There is certainly a lot of cooperation going on between the services—and with OSD [Office of the Secretary of Defense], I might add—to make sure that we are protected from the tactical through the strategic level. Certainly, for the Army, we're building a lot of capability at the brigade level and above to deal with the tactical problems that we might face. I can tell you, with regard to the modernization priorities and the cross-functional teams, I've talked to them, and they're committed to making sure that whatever we procure for the future is cyber hardened and cyber resilient. As you think higher and look across the DOD, we're looking at the same thing to make sure we can protect our data. It's recognized that this is a vulnerability. I can't go into too much detail, but there is clear recognition that that's the case, and we need to be able to attract the talent, as the Chief spoke to, the talent from the private sector, to make sure that we are on the cutting edge and are capable of defending ourselves in this—in what is considered a—could be an asymmetric vulnerability.

Senator PERDUE. Thank you both.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Gillibrand.

Senator GILLIBRAND. Thank you.

Dr. Esper and General Milley, thank you for being here, and thank you for your service.

On April 3rd, 2018, the American Medical Association wrote a letter to Secretary Mattis decrying the recent policy release by the White House. Echoing concerns raised by the Americans Psychological Association and two former surgeon generals, the American Medical Association said, quote, "We believe there is no medically valid reason, including the diagnosis of gender dysphoria, to exclude transgender individuals from military service." The memo mischaracterizes and rejected the wide body of peer-reviewed research on the effectiveness of transgender medical care. Yet the DOD, quote, "panel of experts," quote, "came out to a drastically different conclusion from the preeminent medical organizations in America about gender dysphoria, the effectiveness and impact of gender transition on medical and psychological health, and the ability of transgender servicemembers to meet standards of accession and retention." Who represented the Army on this panel?

General MILLEY. For the Army, it was, I believe, the Vice Chief of Staff of the Army, General McConville.

Senator GILLIBRAND. Did the Army include any health professionals on the panel? If so, who?

General MILLEY. I don't know the specific answer to your question, in terms of "on the panel," but there were—General McConville consulted with lots of internal folks, medical professionals. Absolutely, yes.

Senator GILLIBRAND. Can you submit to the committee who was consulted, specifically?

General MILLEY. Absolutely. Yeah, sure.

[The information referred to follows:]

The Panel received support from medical and personnel experts from across the Departments of Defense and Homeland Security. The Medical and Personnel Executive Steering Committee, a standing group of the Surgeons General and Service Personnel Chiefs, provided the Panel with an analysis of accession standards, a multidisciplinary review of relevant data, and information about medical treatment for gender dysphoria. The Panel also received input from military medical professionals and civilian medical professionals with experience in the care and treatment of individuals with gender dysphoria.

Senator GILLIBRAND. Do you know whether any health professionals from within the Government and outside of it testified before, or consulted with, the panel in written testimony, or was it just verbal?

General MILLEY. With the DOD panel?

Senator GILLIBRAND. Uh-huh.

General MILLEY. I don't know if it was written or verbal, but I can get you the answer.

Senator GILLIBRAND. Whatever you—whatever was submitted, we'd like to see, please.

General MILLEY. Yeah, yeah. Sure.

Senator GILLIBRAND. Thank you.

General MILLEY. Sure. Sure.

[The information referred to follows:]

Department of Defense medical providers from all Services who provide health care services for transgender Service members and civilian medical experts in the field of transgender care consulted with the panel in a verbal discussion. Input was provided to the Panel in many forms, both written and verbal.

Senator GILLIBRAND. Are you aware of anyone else who contributed to the panel?

General MILLEY. Each of the service vices, I believe, was on it. There were several DOD folks. I think the—I'm pretty sure the panel was led by DOD P&R, if I remember right—Personnel and Readiness—the Under Secretary for Personnel and Readiness. We can get you the exact names.

Senator GILLIBRAND. Great. Thank you——

General MILLEY. Sure.

Senator GILLIBRAND.—so much.

General MILLEY. Yeah.

Senator GILLIBRAND. And any information they submitted.

[The information referred to follows:]

The Army representatives on the Panel included the Senior Officer Performing the duties of the Under Secretary of the Army, Mr. Thomas Kelly, the Army Vice Chief of Staff, General James McConville, and the Sergeant Major of the Army, Sergeant Major Daniel Dailey.

General MILLEY. Sure.

Senator GILLIBRAND. Dr. Esper and General Milley, in light of the existing injunctions, DOD is currently operating under the previous transgender open service policy put in place by the last administration, yet transgender soldiers have now seen the Department's recommendations and are on notice that, if the policy is implemented, they will get kicked out for seeking care or treatment for their gender dysphoria. I'm worried that this uncertainty will get—will have a negative impact on these individuals, but also on their units, and that fear of these recommendations will stop these soldiers from seeking care. What are you doing to ensure readiness

in light of the pall that has been cast on the future of transgender soldiers?

Dr. ESPER. Senator, we continue to treat every soldier, transgender or not, with dignity and respect, ensure that they're well trained and well equipped for whatever future fights. With regard to accessions, our accessions folks understand that we are operating under the Carter policy, if you will. We've had some persons already join, transgender persons join, and we will continue to access them and train them and treat them well, in accordance with that policy.

Senator GILLIBRAND. Well, I'm concerned, because the report that was included with the memo claimed that transgender persons serving in our military might hurt unit cohesion. So, that is different than treating everyone with dignity and respect. When asked by reporters, in February, whether soldiers have concerns about serving beside openly transgender individuals, you said it really hasn't come up. Are you aware of any problems with unit cohesion arising since you made that comment? If so, can you tell us how they were handled by the unit leadership involved?

Dr. ESPER. Senator, nothing has percolated up to my level. When I made that comment, I was—it was a question about, you know, have I met with soldiers and talked about these issues? What do they raise? As I said then, the soldiers tend to—you know, young kids tend to raise the issue in front of them at the day. It could be that they're performing all-night duty or didn't get their paycheck, and this was just not an issue that came up at that moment in time. Beyond that——

Senator GILLIBRAND. Have you since heard anything, how transgender servicemembers are harming unit cohesion?

Dr. ESPER. Again, nothing has percolated up to me.

Senator GILLIBRAND. General Milley, have you heard that?

General MILLEY. No, not at all. The—and we have a finite number. We know who they are, and it is monitored very closely, because, you know, I'm concerned about that, and want to make sure that they are, in fact, treated with dignity and respect. And no, I have received precisely zero reports of issues of cohesion, discipline, morale, and all those sorts of things. No.

Senator GILLIBRAND. Okay. That's good news.

I know that the Secretary spoke with transgender soldiers recently. Of all the ones that you have personally spoke with of the Active Duty transgender soldiers, were you concerned by any of them continuing to serve?

Dr. ESPER. Well, I actually met with them in the first 30 days on the job, Senator. And no, nothing came up that would cause me concern. I was, you know, impressed by what I heard.

Senator GILLIBRAND. Have either of you spoken to any transgender servicemembers since this set of recommendations was released by the administration in March? If you have, what did you hear?

Dr. ESPER. No, ma'am.

General MILLEY. I have not. I did before. I have not. But, as you know, the case, as you are well aware, is in litigation. It's in four different courts. So, we're limited in, what we should or could say right this minute, because it could, either one way or the other, im-

pact that litigation. But, let me just say that our feeling and I'll say my feeling, my view is that we have an Army that is standards-based. It has always been standards-based, it will remain standards-based for medical, physical, psychological, conduct, et cetera. Those soldiers or those applicants of people who want to access into the Army that meet those standards—and they're rigorous standards—if you meet those standards, then you're on the team. If you don't meet those standards, for whatever reason, then you won't be on the team. It's that simple, and those standards are based upon the rigors of ground combat, and it's important that this 1 percent who wear this uniform and the cloth of our country, we're giving up certain civil rights so the other 99 percent can retain their civil rights. We know that. We do it willingly, and volunteer to do it.

So, this is not an issue—with respect to transgenders, this is not an issue, in our—my view, it's not a civil rights issue. This is an issue of standards and maintaining the deployability and the combat effectiveness and lethality of the United States Army. I think I speak for the other services—service chiefs, as well.

Senator GILLIBRAND. Thank you.

General MILLEY. Standards-based.

Senator GILLIBRAND. Thank you.

Senator INHOFE. Senator Kaine.

Senator KAINE. Thank you, Mr. Chair.

Thanks, to the witnesses, for this important hearing.

Secretary Esper, I want to ask you about a passion of mine. I've got two bills filed in the Senate now, which I am hoping might be included, ultimately, in the mark for the NDAA. One is a Military Spouse Employment Act, and colleagues on this committee, including Senators Gillibrand and Perdue, are cosponsors. The second is the Childcare for Military Families Act. Senator Rounds on this committee is a cosponsor.

What I've tried to do in both of these bills is take a significant amount of feedback from spouses all across the country to address major factors leading to an unacceptably high unemployment rate among military spouses. As I've worked with spouses on this issue, we've identified a whole series of challenges and causes: lack of direct employment opportunities with other Federal agencies, lack of childcare, lack of or underutilization of education and training resources, lack of counseling, frequent moves. Additionally, the first bill tries to encourage more public/private partnerships for the DOD and more opportunities for entrepreneurship on military bases for military spouses.

These bills, the two, address each of these issues. I don't think there's a silver bullet that's going to drop the unemployment rate of military spouses from three to five times the national average to the national average, but I think these bills offer a great start in beginning this conversation and moving us in the right direction.

I want to ask if you've had a chance to review the legislation. Is this an effort that the Army would be supportive of?

Dr. ESPER. Senator, I looked over the legislation. I'm impressed by what you put in there. As I shared with you before, I think these are some of the most important challenges, if not the most important challenges, facing our spouses—Army spouses. I know

my wife experienced the same challenges when I was on Active Duty.

Everywhere I go, if there's a family readiness group, spouses, I meet with them, and this issue comes up over and over and over again. They are intricately linked. The fact that it takes, on average, 140 days to hire someone is hurting the Army, it's hurting our readiness, and it's certainly hurting spouses, and as a result, it hurts retention.

The direct link here, as I think I shared with you, is, if you can—we have daycare centers that go unfilled with supervisors because it takes months to hire them. The supply is there to tap into, but the—it's cluttered up in everything from things that we are doing within the building all the way up to, you know, how OPM handles it.

So, I've talked to staff, I've talked to members about the need to fix this problem, because it's—there's nothing but good if we can.

Senator KAINE. I have a son in the military who signed up and then did—for a first four, and then a second three, as a single individual, and now is married. As he gets to the 7-year point and he has to make another decision, it's fundamentally a very different decision.

Dr. ESPER. Yes, sir. Well, we like to say you recruit soldiers and retain families.

Senator KAINE. It's very true, and so, you know, the ability of spouses to feel like, with the sacrifice that they bear, there is going to be an opportunity for them to put their talents to use is a really important part of retention. I appreciate your answer to this.

I have one other question. We had a Readiness Subcommittee hearing—Chair Inhofe is the chair of our Readiness Subcommittee—in February, had the service vices in, and I asked about how the services are balancing reconstitution efforts against the COCOM [Combatant Command] force requests. Focusing specifically on the Army, to each of you, General McConville answered, that day, and he said, basically, "We need more people and fewer missions." The funding that we just did in the budget, I think, is going to be really helpful over the next 18 months on the first part of this, the funding for the additional people, but how about the second part, the fewer missions? Is there an opportunity to reconstitute, since we now have fewer troops in Iraq and Afghanistan, or are the additional necessary missions that we're engaged in around the world sort of immediately taking up whatever slack there was from that drawdown in Iraq and Afghanistan?

Dr. ESPER. Yes, sir. This is a supply-and-demand issue, and I think, with the 2018 and 2019 bills, we can grow end strength. It helps us create more supply, fully flesh out our units, et cetera. But, there is the demand side of the equation. It's something that we've had discussions with internally, we've discussed it with OSD to look at, you know, the range of demands placed on the Army. Can we do some of it differently? Can we look at lower-value exercises or training, and, you know, if not limit them, reduce them, make them at least more productive to preserve readiness?

What we really have to do is get the soldier deployment rate, the bog-to-dwell, as we call it, up to the 1-year to 2-year standard. Right now, we're well below that. We're somewhere just north of

one. That has an impact on the force, both in terms of readiness, and retention, it has a range of impacts that we need to address with regard to that.

Senator KAINE. Thank you very much.

Appreciate it, Mr. Chair.

Senator INHOFE. Senator Donnelly.

Senator DONNELLY. Thank you, Mr. Chair.

Thank you, to both of the witnesses.

I know the Army's committed to addressing military suicide. I'm sure both of you know that suicide risk among servicemembers often isn't tied to deployments or combat experiences. We can't be restricting our most rigorous mental health assessments to the deployment cycle. This committee helped pass legislation in 2014 to ensure every servicemember—Active, Guard, or Reserve—receives a thorough in-person mental health assessment every year. It was named after a brave Hoosier soldier, Jacob Sexton, who was lost to suicide in 2009. It's my understanding that the Army is now fully implementing the Sexton Act requirement for a robust annual mental health assessment. Is that correct?

Dr. ESPER. Correct.

Senator DONNELLY. Thank you.

General MILLEY. That's correct.

Senator DONNELLY. What are your top priorities, looking forward, for combating military suicide, the best tools you think you have in improving mental health services for our soldiers this year and in the years ahead? What do you think are some of the areas where, when you look at general—that you look, and you go, you know, "Here's one of the causes of some of this, and the best way to try to reduce it"?

Dr. ESPER. Well, Senator, thank you for raising this issue. It's very troubling. I sign too many condolence letters associated with, you know, the scourge of suicide, and the rates that I see across the Army are not heading in the right direction. I mean, we need to get them, rather than flat, heading the right direction. The challenge is, you know, particularly troubling in the Guard and Reserve, where you—where units only come together every 30 days and break back up.

You're right, it's not related to—necessarily, to deployments. The experts will tell you it's hard to pin it down. But, we do know the most vulnerable population are these young soldiers, 17 to 22 or so. It often is—the cause is a relationship issue, you know, a breakup, whatever the case may be.

As I've looked at this problem, I've asked our folks to come back with, you know, new thinking with regard to strategies that we can deal with this. We already put behavioral health experts in the units. We provide a lot more access. As I've talked with some of the committee staff, we need to make sure the commanders and the officers in the units have greater access to that type of information so they know how to deal with soldiers. But, I also think it's critical that we make sure that the chain of command is responsible and in charge. In some cases, we've moved away from that. So, making sure that we implement programs like Not in My Squad, that we put NCOs, junior officers, back in charge of teaching their soldiers resiliency. All that is important.

Senator DONNELLY. General?

General MILLEY. Yeah, I think the key, Senator, is two things in order for—for prevention. We have a lot of resources, and we appreciate the support of Congress in helping us do that. But, I think the key—and the resources have to be focused in two particular areas. One is situational awareness of the soldiers in a squad, in a platoon, in a company, of the early warning indicators and signs of potential suicide, the stressors that are on an individual soldier. The first key is, recognize the early warning signs—the second key is, know that you can intervene, that we are, in fact, our brother and sister's keeper, that being silent is not okay—to intervene, to take action, and to get that soldier help. They are reaching out, they are crying out for help. Get them help. So, situational awareness, and it's okay to intervene.

Senator DONNELLY. Great. Thank you.

To both of you, I just wanted to mention that, in Indiana, we have a training center, Muscatatuck. It's used for all types of training. It's a national asset. It's a venue that can help prepare our forces for current, future threats. I just wanted to make both of you aware of it. Hope you both have a chance, at some point soon, to go there.

Dr. ESPER. Yes, sir. It's on my visit list. I think——

Senator DONNELLY. Great.

Dr. ESPER.—in the next 4 or 5 months, I plan on coming out there.

Senator DONNELLY. Terrific.

General, what does stability look like in Afghanistan? When you look at that, and you look and go, "This is an acceptable state to move forward with," how do you see that?

General MILLEY. A couple of things, Senator, that we've defined in the strategy. One is that Afghanistan—and this has been the objective since 2001—that Afghanistan no longer is a platform for terrorists to conduct strikes on the continental United States, or in the United States. That's key. That's why we're there, and that's why we're still there.

Secondly, how do you achieve that? You achieve it through a stable Afghanistan. So, what does that look like? It means that the armed opposition—the Taliban, the Haqqani Network, al Qaeda, ISIS–K, and all these other groups—are reduced, in terms of capability, that they no longer present an existential threat to the regime in Kabul, and that the Afghan National Security Forces, writ large—their army, their police, their intelligence forces—can handle the violent threat against the regime at a level that is something akin to crime or banditry, and they are no longer capable of—the enemy is no longer capable of actually presenting a downfall to the regime.

Senator DONNELLY. The last thing I want to ask, real quick, is just, can we do that without the real cooperation of Pakistan?

General MILLEY. Well, that's the end state of Afghanistan, is reduce the threat to something that can be handled on a routine basis by the internal security forces. In order to do that, you have to essentially do several things. You mentioned Pakistan. That is key. It's important that Pakistan is part of the solution. It's a regional solution. Part of our strategy is a regional strategy. That in-

volves—very much involves Pakistan. It's very, very difficult to eliminate any insurgency if that insurgency has safe haven in another country. Right now, the Taliban, Haqqani, and other organizations do, in fact, enjoy some safe haven in the border regions on the Pakistani side of the border. Pakistan's got to be part of the solution.

Lastly is reconciliation. At the end of the day, the Afghan Government has got—is on the path right now to establishing some sort of political reconciliation with the various opponent groups. We're in support of that effort.

So, it's important that we realign the forces, that we reinforce the capabilities that we're already doing, and that we regionalize the problem, including Pakistan, and that there's some sort of reconciliation process. At the end of the day, that's how that ends, and it ends successfully. I believe that's achievable.

Senator DONNELLY. Thank you, General.

Thank you.

Senator INHOFE. Thank you.

Senator Blumenthal.

Senator BLUMENTHAL. Thanks, Mr. Chairman.

I join my colleagues in thanking you for your service, and thank you for being here today.

I want to focus on Ukraine. I know, Mr. Secretary, you visited with some Ukrainian soldiers recently. You have been to Europe and various Army posts there, and discussed this issue with them. Operation Atlantic Resolve, as you know, is an Army-led operation designed to reassure our NATO allies and partners of America's dedication in the region after Russia's illegal annexation of Crimea and its continued aggression—I might say, overt defiant military aggression in Ukraine. Since April of 2014, the Army has conducted continuous multinational and security cooperation training through the European Deterrence Initiative. As someone watching from the outside, my conclusion would be that whatever we're doing there has had no impact, no effect whatsoever on Russian aggression, either to deter it or defeat it. Maybe you can dissuade me.

Dr. ESPER. Senator, I did visit Europe in January. I went to Belgium, Poland, Germany, and Ukraine, with different focus on each. My takeaway was that, at least with regard to Atlantic Resolve when I met with the Poles, both the military and on the Ministry of Defense side, that they were very happy with our presence there, that they felt it provided not just a reassurance role, but also a deterrence role. It was not just because of United States troops, but you had NATO [North Atlantic Treaty Organization] troops in all the Baltic states and Poland. They were very eager to continue to improve that relationship, to increase the number of forces. When I was in Germany, for example, with regard to exercises, a Polish brigade was training in Germany with American, Italian, British units underneath it. So, a lot of great training happening. But, my sense—and I recently met with a Lithuanian Vice Defense Minister—again, very happy with our presence there, and very reassured in the helpfulness of what the EDI funding has provided.

Senator BLUMENTHAL. I apologize. I probably was less than fully clear in my question. Focusing on Ukraine.

Dr. ESPER. Ukraine, I was very impressed by the New York National Guard at the time was training, and the training was going exceedingly well. What's interesting is the degree to which Ukraine is really adapting to NATO doctrine, NATO standards, really building a—quite a capability. What's interesting is, they're using the facility that we're training at in western Ukraine not just to bring in new recruits, but to bring soldiers off the front lines in eastern Ukraine, in Donbass, and coming back to the training site and incorporating those lessons learned.

Senator BLUMENTHAL. Is it having an effect on the battlefield?

Dr. ESPER. Yes, sir. I think what the Ukrainian officers told me was, it was having an effect, in terms of their performance. The soldiers felt reassured. But, that was my takeaway. I don't——

General MILLEY. Yes, Senator, it has. The violence along the Ukrainian in the—along the line of contact is at a 3-year low right now. That's significant.

Senator BLUMENTHAL. The level of violence is at a 3-year low.

General MILLEY. That's correct.

Senator BLUMENTHAL. But, have they pushed back?

General MILLEY. Well, there is cause and effect as to why it's low. It's, in part, because the Ukrainian capability has increased since we have begun an advisory effort in our support efforts, and because they're fighting against the various separatist groups in eastern Donbass. So, the Ukrainian military's performance has increased, the enemy's performance has met that and is reduced, and they recognize what they're up against, therefore the violence has subsided. It's not done. There's still violence. Don't get me wrong.

Senator BLUMENTHAL. The other way of interpreting the situation—and I say it with all due respect—is, the Russians have gotten what they want, for now, and they and their proxies—and I mean the Russians—are staying put, maybe because they sense a little bit more strength from the Ukrainians; but, in terms of their ill-gotten gains, they are satisfied they've divided the country.

General MILLEY. That is a way of looking at it, that's correct.

Senator BLUMENTHAL. Is there a Ukrainian determination to push back and to recover——

General MILLEY. From my visit there and, I think, Secretary Esper's visit there, the Ukrainians have determined that Ukraine is a sovereign nation and that they intend to remain a sovereign nation. They do not accept annexation of eastern Donbass. That's what the Ukrainians told me, and I believe that's what they told you, and I believe that's their stated policy position.

Senator BLUMENTHAL. Thank you.

I really appreciate both of——

General MILLEY. Yes, sir.

Senator BLUMENTHAL.—your candor and your very informed presentation today.

Thank you.

Senator INHOFE. I want to say thank you to our witnesses. It's been—I appreciate your patience and your responses. They've been excellent.

We're adjourned.

[Whereupon, at 11:45 a.m., the committee was adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JOHN MCCAIN

ARMY MISSILE DEFENSE

1. Senator MCCAIN. Secretary Esper and General Milley, what is the impact of M–SHORAD's pull to the left on the Army's existing failure to deliver IFPC in a timely manner?

Secretary ESPER and General MILLEY. Maneuver–Short Range Air Defense (M–SHORAD) fielding schedule is not linked to IFPC's fielding schedule. IFPC is currently on schedule for an Initial Operating Capability (IOC) in fiscal year 2021 with fielding of the fourth battalion complete by fourth quarter fiscal year 2022 and is not linked to M–SHORAD's fielding schedule.

2. Senator MCCAIN. Secretary Esper and General Milley, please explain how the investment in M–SHORAD will contribute to the overall National Defense Strategy.

Secretary ESPER and General MILLEY. The National Defense Strategy (NDS) prioritizes readiness against great power competitors. M–SHORAD supports this focus through the protection of maneuver forces from air threats, manned and unmanned, during potential operations in the Blunt and Surge layers of the NDS Global Operating Model. The M–SHORAD program will enable a more lethal, resilient, agile, and ready Army and allow forces to survive while maneuvering and operating without domain superiority. Recent studies have shown that M–SHORAD increases the ability to achieve the desired ends. Given the change in focus codified in the new NDS, the Army must return to this much-needed capability in order to deter and win in a contested and challenging environment.

3. Senator MCCAIN. Secretary Esper and General Milley, what risks is the Army taking on in order to field M–SHORAD five years faster than originally anticipated?

Secretary ESPER and General MILLEY. There is no risk because the Initial Maneuver—Short Range Air Defense (IM–SHORAD) addresses a subset of the Initial Capabilities Document (ICD) requirements. Several vendors have demonstrated capability and IM–SHORAD will execute in an interim capacity until M–SHORAD meets the full ICD requirements. The initial IM–SHORAD fielding is being accomplished in fiscal year 2020 accelerating the original Initial Capability Document (ICD) anticipated fielding of fiscal year 2025.

4. Senator MCCAIN. Secretary Esper and General Milley, how will the Army's Cross-Functional Teams contribute to successful deployment of M–SHORAD?

Secretary ESPER and General MILLEY. The Air and Missile Defense (AMD) Cross-Functional Team (CFT) will accelerate the fielding of maneuver short-range air defense (M–SHORAD) battalions to divisions starting in fiscal year 2021 with a plan to cover all 10 active divisions by fiscal year 2025. M–SHORAD will be employed as part of a tiered and layered approach to establish cross-domain dominance of tactical airspace. This will enable the Land Component to penetrate the A2AD in support of multi-domain operations in a contested environment. In addition to accelerating the material solution, the CFT will assist in overseeing the synchronization of the Doctrine, Organization, Training, Leader Development, Personnel, and Facilities (DOTMLPF).

5. Senator MCCAIN. Secretary Esper and General Milley, how will M–SHORAD contribute to the Army's mission to protect the joint force?

Secretary ESPER and General MILLEY. Currently, there is need to better protect the maneuver force, and developing a solution for this problem is of the highest priority. Maneuver-Short Range Air Defense (M–SHORAD) will employ a mix of sensors and shooters to protect Army Divisions, focused on the Brigade Combat Team and below, by providing defense against rotary wing, fixed wing, and Unmanned Aircraft Systems (UAS). Commanders will integrate this Stryker-based, maneuverable capability into combat formations to employ multiple effectors, guns and missiles, up to eight kilometers against fixed and rotary wing threats, and up to six kilometers against UAS. The system will utilize an on-board sensor and links to air defense networks for additional situational awareness and combat identification. While not directly assigned to support other Joint Forces, the Combatant Commander (based on a defined critical asset list) has the flexibility to prioritize key assets across all phases of the operation in support of all components on the battlefield.

6. Senator MCCAIN. General Milley, will M–SHORAD have capabilities to defend against cruise missiles?

General MILLEY. No. M–SHORAD will not have the capability to defend against cruise missiles. The Army program to counter cruise missiles is the Indirect Fire Protection Capability, Increment 2–Intercept (IFPC Inc. 2–I) with planned Initial Operating Capability (IOC) in fiscal year 2021. We also have cruise missile defense capability with the Patriot system and the Integrated Air Defense System (NCR–IADS).

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

BRIGADE COMBAT TEAM READINESS

7. Senator SULLIVAN. Secretary Esper and General Milley, in your joint testimony, you state the number of brigade combat teams in the highest state of personnel readiness has more than doubled, which is certainly worthy of praise. Three years ago during the end of the Obama administration, we only had one "ready" BCT and three at the "almost ready" level. How many BCTs are considered "ready" now or "almost ready"?

Why do you think BCT readiness has improved so dramatically? It is related to Congressional funding? End strength?

Secretary ESPER and General MILLEY. The Army has eight Brigade Combat Teams fully ready. The Army's emphasis on readiness is the primary factor for our improvement enabled by additional funding from Congress. With focus comes the actions over time necessary to synchronize and improve training, equipment, maintenance, and personnel. In the last three years there are numerous examples of how the Army's emphasis has improved readiness. These include a re-focus on Decisive Action training against a near-peer adversary; increasing the number of Combat Training Center rotations from 15 to 20; implementing the Sustainable Readiness process; working with combatant commands to ensure deployed Brigade Combat Teams continue to build readiness when possible; improving the Army's training strategy.

Stable, consistent and adequate funding is critical to the Army's effort and ensures the Army can plan, resource and fund readiness. Increased end strength authorization and funding will also increase readiness. While it will take some time to bring the additional soldiers into the Army, a responsible increase in end strength does two things. First, in the near term it helps fill personnel shortages in key units. Second, it allows the Army to make existing units more robust with critical capabilities like aviation, rocket artillery, ballistic and air defense, cyber, electronic warfare, and unique sustainment elements.

REDUCING MANDATORY TRAINING

8. Senator SULLIVAN. Secretary Esper and General Milley, I applaud your continued efforts to reduce mandatory training so our soldiers can actually focus on critical combat training. How much mandatory, non-combat training has been reduced or eliminated thus far and—due to these reductions—what benefits are you seeing in improving the lethality of the force?

Secretary ESPER and General MILLEY. We are building a more lethal force by reducing requirements in brigade and below units. Our efforts are providing commanders more time to prioritize activities and time to enhance the readiness and lethality of our formations. We are underwriting prudent risk assessment and risk mitigation so commanders at each echelon are empowered to prioritize combat-related tasks over all others. Our efforts have identified numerous mandatory tasks not directly supporting combat readiness. To date, our proponents have recommended adjustment to roughly 25 percent of the over 1,800 tasks identified as affecting brigades or below. We expect more change recommendations as we continue this effort. As tasks are approved by the Secretary of the Army for elimination, simplification or consolidation, we are publishing policy changes to rapidly implement the changes across the force. The Secretary of the Army published four policy change memorandums in April 2018. We plan to publish an Army Directive summarizing all changes after the June 2018 Senior Leader Readiness Forum.

9. Senator SULLIVAN. Secretary Esper and General Milley, what is the percentage or hours of duty time that soldiers should ideally devote to mandatory, non-combat training and when do you anticipate being able to reduce down to that amount?

Secretary ESPER and General MILLEY. The percentage of duty time devoted to mandatory, non-combat related training is at the discretion of the commander. Commanders must train to standard and not to time. However, the Army is continuing to review mandatory, non-combat related training to eliminate, consolidate, and

simplify requirements in order to reduce the administrative process and reduce the burden on soldiers. This effort will take some time but ultimately will help build a more capable and lethal force.

10. Senator SULLIVAN. Secretary Esper and General Milley, can you talk about moving away from mandatory online training and moving back toward empowering unit leaders to properly train their soldiers?

Secretary ESPER and General MILLEY. Commanders have full authority to simplify, reduce, or eliminate those tasks which are not combat related, while making prudent risk-informed decisions. Mandatory training no longer has a prescribed duration and will have alternative methods of delivery which do not require the use of an automated online or projected system. Online training may be used to supplement training conducted by leaders, but does not suffice as a substitute for it. Training must be led and conducted by their leaders.

JPARC FOR ADVANCED GROUND AND AIR TRAINING

11. Senator SULLIVAN. General Milley, in order to properly prepare for intense joint combat operations (such as North Korea), as well as near-peer conflicts, would you agree that we need specific and large-scale Joint Air and Ground combat exercises that improve our joint readiness?

General MILLEY. The Army agrees that large-scale joint air and ground combat exercises improves joint readiness. The Army will continue to seek these types of exercises to improve its joint interoperability. Current examples include the U.S. Army Combat Training Centers (CTCs) and large-scale exercises such as the Joint Warfighting Assessment (JWA) exercise program, utilizing the Decisive Action Training Environment (DATE) to train Brigade Combat Teams (BCTs), Division and Corps level Commanders plus staffs. Bilateral agreements between the Army and the Air Force exist to support the Army's CTC rotations and large scale exercises, as well as improve and facilitate joint interoperability in the air and land domains.

12. Senator SULLIVAN. General Milley, following up from the previous question, the JPARC in Alaska is the largest joint overland training area in the U.S. with airspace the size of Florida. Would you agree that it is an ideal location for the type of advanced integrated training we will need to best counter high-end and near-peer threats

General MILLEY. The Army recognizes the unique and important training opportunities at the Joint Pacific Range Complex (JPARC). The Army's training areas associated with Fort Wainwright are central to that capability. The facilities and infrastructure within the JPARC can enable scenarios supporting advanced integrated training; primarily for Army division and above assets including Grey Eagle, HIMARS, AH–64, and Patriot. Readiness of joint formations to fight large-scale integrated battle campaigns is primarily the responsibility of Combatant Commanders and are accomplished through joint exercises. The Army infrastructure supports integrated training at JPARC, notably the USAF's Red Flag.

SMALL UNIT SUPPORT VEHICLE (SUSV) AND JOINT ALL-TERRAIN ALL-WEATHER SUPPORT VEHICLE (JAASV) ADVOCACY

13. Senator SULLIVAN. General Milley, Alaska, as well as several State National Guard units, rely on the Small Unit Support Vehicle (SUS–V) to maneuver in cold weather, austere environments. While the SUS–V is no longer a program of record, it is a necessity for areas like the Arctic. What is the Army's plan to keep these vehicles maintained, which is becoming increasingly more difficult?

General MILLEY. The current Small Unit Support Vehicle (SUS–V) is maintained with unit operation and maintenance funding. Recognizing the increasing difficulty in maintaining the current fleet, the Army's Training and Doctrine Command is conducting a business case analysis to evaluate replacement options, assess the capabilities of available commercial options, and provide recommendations on changes to SUS–V tactics, techniques and procedures. This analysis is scheduled to be completed by the end of fiscal year 2018.

14. Senator SULLIVAN. General Milley, the plan for the procurement of the Joint All-terrain All-Weather Support Vehicle (JAASV), a much-needed replacement to the SUS–V, is not scheduled to even compete until the 2020–2024 POM. That means that a replacement to the SUSV could be over a decade away. Isn't there already a commercially available solution that Army could utilize?

General MILLEY. Yes, we understand that there may be commercial vehicles that provide some of the capabilities required of the Small Unit Support Vehicle (SUS–

V) / Joint All-terrain All-Weather Support Vehicle. The Army's Training and Doctrine Command is conducting a business case analysis to evaluate replacement options, assess the capabilities of available commercial options, and provide recommendations on changes to SUS–V tactics, techniques and procedures. The analysis will also consider alternative acquisition solutions, such as leasing rather than conventional procurement, to significantly reduce the amount of time required to field a SUS–V replacement. This analysis will be completed by the end of this fiscal year and will inform funding decisions for next year's budget request.

QUESTIONS SUBMITTED BY SENATOR BEN SASSE

CYBER POLICY AND FORCE STRUCTURE

15. Senator SASSE. Secretary Esper and General Milley, recently stated that the Army had to change its force structure to have sufficient capacity and capability to ensure overmatch in everything, including cyber. Please explain how the Army is doing this, including any regulation or policy that is guiding the Army's cyber development, and how the Army is working with USCYBERCOM on cyber issues, including training and equipping the force.

Secretary ESPER and General MILLEY. The Army is modernizing its force structure to ensure capacity and capabilities overmatch through force structure development, capability modernization, and critical infrastructure and weapon systems hardening. Published in 2016, the Army Cyberspace Strategy for Unified Land Operations 2025 guides Army cyberspace capability development through five lines of effort: building the workforce, cyberspace operations, capability development, facilities/systems and infrastructure, and building partnerships.

Army Cyber Mission Force teams are being equipped with cutting-edge cyber tools to protect against sophisticated cyber attacks and to ensure military advantage in cyberspace. In support of the USCYBERCOM led DOD Cyber Mission Force, the Army is building cyber threat realism into the virtual scenarios within the Persistent Cyber Training Environment to keep pace with adversaries' Tactics, Techniques, and Procedures. In addition to the Cyber Mission Force, the Army is currently reviewing proposed force structure changes to increase cyberspace capacity and capability for Corps and below commanders, including the recently approved Multi-Domain Task Force (MDTF) pilot.

The Army continues to improve the defensive posture of C4 networks and reduce vulnerabilities of weapons systems, warfighting platforms and mission critical infrastructure, through network improvements, equipment modernization, and cyberspace operational resilience assessments.

CYBER DIRECT COMMISSION PROGRAM

16. Senator SASSE. Secretary Esper and General Milley, please describe why the Army chose to create this program, your estimation of its success, and how many officers have been commissioned through the program.

Secretary ESPER and General MILLEY. In accordance with National Defense Authorization Act 2017 section 509, the Army designed the Cyber Direct Commissioning Pilot Program to assess into service uniquely skilled and experienced individuals who meet program requirements. The program leverages existing expertise in academia and industry to close existing gaps in key competencies within the Army's cyber mission forces. These technical officers will support and lead rapid cyber capability development and analytics.

The Army began the direct commission program in October of 2017, reviewing a total of 205 applications. Two iterations of the selection process have been completed, and the third iteration is currently underway. The quantity and quality of applicants has increased with each iteration. There is an expectation that this upward trend will continue as we work to recruit more and better qualified cyber specialists by working with Congress to increase the amount of constructive credit (up to the grade of O6) that may be offered direct commission applicants.

Two officers have commissioned through the program as First Lieutenants. These officers are currently in the Direct Commissioning Course at Fort Benning, Georgia. Upon graduation, they will attend the Cyber Basic Officer Leaders Course at Fort Gordon, Georgia and are expected to report to their units in late October 2018.

LAND-BASED ANTI-SHIP MISSILE

17. Senator SASSE. Secretary Esper and General Milley, describe the Army's current capability to sink enemy ships, what future capabilities the Army is developing

to gain or increase that capacity, and how it is working with sister services in this effort.

Secretary ESPER and General MILLEY. The United States Pacific Command identified a doctrinal capability deficiency in 2017 and submitted an Operational Need Statement requesting the Army to develop a Land Based Anti-Ship Missile (LBASM) to address this gap. The Strategic Capabilities Office (SCO) has lead on the effort and plans to modify an existing Army Tactical Missile System (ATACMS) with a seeker capability to engage selected maritime targets and designated the missile the Cross-Domain ATACMS. The Army is developing doctrine and policy that could include the use of sister service (Navy and Air Force) sensors and target acquisition platforms to enhance an anti-ship kill chain. Further study is needed to adapt a future LBASM capability into any operational need within a COCOM.

SENSOR-SHOOTER INTEGRATION

18. Senator SASSE. Secretary Esper and General Milley, describe the Army's efforts to integrate its Long-Range Precision Fires systems with existing and planned sensor systems fielded by the rest of the services. What obstacles are you encountering in this area and how are you overcoming them?

Secretary ESPER and General MILLEY. The Army currently has ongoing efforts to explore expanding the capability of the sensor-to-shooter network. These efforts involve integrating additional shooters from the U.S. Air Force (USAF)/U.S. Navy (USN) aircraft to National Technical Means through utilization of the LINK–16 architecture to Advanced Field Artillery Technical Data System (AFATDS). Within the LRPF area, Army Science and Technology has two efforts utilizing the AFATDS technology, Multiple Simultaneous Engagement Technologies (MSET) and Land-Based Anti-Ship Missile (LBASM). MSET starts in fiscal year 2020 (FY20), and will demonstrate technology readiness level (TRL) 6 in fiscal year 2024. MSET utilizes a weaponized unmanned air system platform with a data link that could potentially provide an additional sensor-to-shooter pathway. During the Rim of the Pacific Exercise 18, the Army will work with the U.S. Pacific (USARPAC) to demonstrate LBASM fires that are cued from USN aircraft using LINK–16 and AFATDS. A significant challenge facing new sensor-to-shooter pathways is authority; as the list of available sensors and entities that can call for fire expands, determining who has the authority to direct a fire mission and the responsibility for clearance of fires needs to be resolved. A possible solution to this challenge is developing a Common Operation Picture to process inputs from sensors and shooters.

QUESTIONS SUBMITTED BY SENATOR BILL NELSON

U.S. ARMY FUTURE COMMAND NEEDS

19. Senator NELSON. Secretary Esper and General Milley, as we continue to go after terrorist and support our allies and partners in Afghanistan, Africa, and anywhere else we're needed, I'm pleased that the National Defense Strategy has focused on our near-peer competitors. I'm even more pleased that in order to achieve this objective, the Army has decided to create Futures Command, which will modernize our forces and ensure we continue to have the most technologically advanced force in the world. As I mentioned to General Milley yesterday, Orlando would make the perfect home and has everything that Futures Command needs in order to succeed: world class universities, home to existing innovation in the modeling and simulation sector, and access to civilian experts. The Army doesn't know it yet, but ask the Air Force and the Navy and they'll tell you Florida is where you want to be. Given the need for our Army to keep up with rapidly changing technology and near-peer competitors, what will the needs of Futures Command be?

Secretary ESPER and General MILLEY. The most critical need for the Army Futures Command is that it must inculcate a culture of change and possess the talent to make it happen, in both the headquarters and the entire modernization enterprise from concepts through system delivery to the soldier. Thus, we seek to locate the headquarters (because the headquarters must lead the change) in a location that at a minimum meets four criteria: rich in workforce talent with the skills to support the Army's future needs; an established eco-system of innovative commercial entities and academic institutions, where we can partner and learn; and has a high quality of life measurement in order to attract and retain top talent. Further, we have been, and will continue pursuing a data-driven broad-based approach to avoid unintentional confirmation bias based on anecdotal evidence to make the most informed decision possible. We must be the best possible stewards of the resources entrusted to us, and we have taken a deliberate approach to ensure we are posi-

tioned to best partner with a broad spectrum of innovators in industry and academia in an eco-system that helps the leadership generate the large scale cultural change necessary to set conditions for the future.

20. Senator NELSON. Secretary Esper and General Milley, what criteria are the Army using to decide where the Command will be located?

Secretary ESPER and General MILLEY. In order to select the first 15 candidates, four sets of criteria have been applied to the selection process for the headquarters. First, proximity to talent in key technical fields that support the Army's needs for the future, emphasizing computer software and hardware, novel materials, and both emerging and traditional engineering specialties; second, proximity to private sector innovation to ensure our access to commercial partners with track records in delivering innovative solutions; third, proximity to academic R&D focused on Science, Technology, Mathematics, and Engineering (STEM), so we can easily and pervasively access cutting edge basic and applied research; and fourth, a quality of life assessment (based on the AARP Livability Index), to ensure we attract and retain top talent. We will use the inputs received from the candidate cities, and other factors, to further enrich our analysis and assist in down selection to a smaller number of cities that we can reasonably visit.

CYBER AND ELECTRONIC WARFARE

21. Senator NELSON. Secretary Esper and General Milley, our Army is an extremely lethal fighting force. No one wants to go head to head with our soldiers. Instead, our peer competitors are investing heavily in technologies to take away our advantage in cyberspace and the electronic spectrum. How is the Army balancing the requirement to fight in the physical space with the growing need to fight in the digital space?

Secretary ESPER and General MILLEY. The Army recognizes that in order to fight and win today's and future battles, it needs to be able to dominate both the physical battlespace and also in cyberspace and the electromagnetic spectrum (EMS) simultaneously.

In addition to the 62 Cyber Mission Force teams, the Department of the Army is undertaking a number of complementary efforts that holistically integrate cyberspace and Electronic Warfare (EW) capabilities at the Corps and below. These efforts include five potential EW-related force initiatives designed to increase operational capacity throughout the Army. The Army's Cyber Electromagnetic Activities Support to Corps and Below pilot at the Army's Combat Training Centers is increasing Brigade Combat Teams' ability to deliver cyberspace effects and conduct electronic warfare in support of their operations in an increasingly contested and congested cyberspace domain and EMS environment.

Additionally, the Army continues to improve the network defensive posture and reduce cyber vulnerabilities to weapons systems, warfighting platforms and mission critical infrastructure at our most critical installations thru network improvements, equipment modernization, and cyberspace operational resilience assessments.

22. Senator NELSON. Secretary Esper and General Milley, what are you doing outside of CYBERCOM to prepare our Brigade Combat Teams for battle in the cyber and electronic warfare environment?

General MILLEY and Secretary ESPER. The Department of the Army is working to increase the pace, stress and rigor of Combat Training Center (CTC) training operations to match a near-peer competitor, including the intensity of OPFOR Cyber, EW, air attacks, indirect fires and chemical warfare.

Since 2015, the Army's Cyber Electromagnetic Activities (CEMA) Support to Corps and Below (CSCB) pilot has been integrated into nine rotations at the Army's Combat Training Centers (CTCs), enabling Brigade Combat Teams (BCTs) to integrate CEMA, which spans both offensive and defensive cyberspace, electronic warfare, and information operations into a BCT's operations with emphasis on the ability to operate in a contested or denied Cyber and Electromagnetic Operational Environment. This pilot has helped BCTs to deliver cyberspace effects and conduct electronic warfare in support of their operations and better understand their unit's footprint in the cyberspace and in the electromagnetic spectrum. It is also helping BCTs maximize the role of their organic Electronic Warfare Section and identify the best methods of using the new Expeditionary CEMA Team concept under the proposed Cyberspace Warfare Support Battalion (CWSB).

JOINT SURVEILLANCE TARGET ATTACK RADAR SYSTEM (JSTAR) CAPABILITIES

23. Senator NELSON. Secretary Esper and General Milley, the Air Force has announced the desire to stop recapitalization efforts for the JSTARS aircraft in favor or newer capabilities on the horizon. We developed this platform specifically to give the Army the edge in defeating a highly-capable enemy ground force on the battlefield. Modernization is what our military needs but I'm concerned the future technology won't be ready for prime time when we need it. Have you been briefed and are you comfortable with the Air Force plan to replace JSTARS? If our soldiers are called upon to stop a heavy Army in the Europe, how critical is the capability the JSTARS offers to our soldiers on the ground?

Secretary ESPER and General MILLEY. I have / have not been briefed on the Air Force's plan to replace the Joint Surveillance Target Attack Radar System (JSTARS). The Army is involved in discussion about the Air Force's plan to replace JSTARS with a new capability and is working closely with the Joint Staff and the Air Force to ensure that the new capability provides the Ground Moving Target Indicator (GMTI) data required to support the Army. The Air Force's plan is not final. We will coordinate with the Office of the Secretary of Defense and the Joint Staff to ensure that the JSTARS replacement satisfies Army requirements for GMTI data. We are supportive of the Air Force's plan to use JSTARS recapitalization funding to pursue a follow-on capability that will be more effective and address threats as outlined in the National Defense Strategy, but are concerned with the cost to the Army to upgrade our ground systems to ensure interoperability with any new system. The Army remains platform-agnostic to how we receive GMTI data. The Army requires GMTI data regardless of the platform to provide early threat warning and que other intelligence, surveillance and reconnaissance sensors to identify threats and support long-range targeting in support of ground maneuver commanders.

24. Senator NELSON. Secretary Esper and General Milley, if our soldiers are called upon to stop a heavy Army in the Europe, how critical is the capability the JSTARS offers to our soldiers on the ground?

Secretary ESPER and General MILLEY. Against a near-peer threat prior to hostilities, the Ground Moving Target Indicator (GMTI) sensor data that the Joint Surveillance Target Attack Radar System (JSTARS) provides is critical. GMTI sensor data provides early threat warning; indicators of slow moving aircraft, ground vehicle and personnel movement; and cues other intelligence, surveillance and reconnaissance (ISR) platforms and sensors with multi-disciplinary intelligence capabilities. However, the Army remains platform-agnostic to how we receive GMTI data. GMTI data provides wide area collection perspective and enables both Joint Force and ground commanders to cue other ISR platforms and collection capabilities to identify threats and enable long-range targeting. The JSTARS GMTI sensor data can mitigate the Army's critical stand-off ISR capability gap to enable long range targeting, which is fundamental to conducting a successful campaign in a near-peer armored (heavy) engagement.

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAEEN

RESEARCH AND DEVELOPMENT

25. Senator SHAEEN. Secretary Esper, while I admire your desire to reform the acquisition system and your efforts to power down to the general officers in the acquisition community, the title 10 responsibility for managing the Research, Development, Technology, and Evaluation (RDTE) funds remains with your acquisition executive, Dr. Jette. We put these legal responsibilities with the Secretary's Civilian staff for a reason. I am concerned that that in your zeal to improve acquisition that you will be delegating too much decision making power to the Future Missions Command without proper authority and as a result will make it unnecessarily difficult, if not impossible for Dr. Jette and his staff to carry out their title 10 responsibilities. Will you ensure us that your staff will have final say on the allocation of RDTE funds in the budget and across the program years?

Secretary ESPER. Yes, I can ensure you that the final decision over the allocation of Research, Development, Test and Evaluation funds in both the budget and future year's program will remain with me and the Army Acquisition Executive. Army Futures Command will have authority over the development and rapid integration of future requirements into the Army, and will provide valuable insight into what and how the Army modernizes in the future. However, the Planning, Programming and Budget Execution process will remain at Army Headquarters, exercised through our existing process that appropriately balances authority between the Secretariat and

the Army Staff and enables my staff principals to exercise their statutory responsibilities.

26. Senator SHAEEN. Secretary Esper, what will you do to ensure that the Assistant Secretary of the Army for Acquisition, Logistics, and Technology (ASA–ALT) remains in charge of planning, programming, and budgeting RDTE funds?

Secretary ESPER. The Army Acquisition Execution will retain co-chairmanship of the Equipping Program Evaluation Group; this is the body that I charge with the planning, programming and budgeting of Research, Development, Test and Evaluation funds.

27. Senator SHAEEN. Secretary Esper, the Army Medical Research and Material Command (MRMC), the Army Corps of Engineers Engineer Research and Development Center (ERDC), and others perform important cross cutting research in supporting the Army that has a significant positive impact on the rest of the Department of Defense and the nation. I am concerned that your efforts to realign Science and Technology (S&T) funds into cross functional teams that support the acquisition community will have the unintended consequence of stopping important research that is important to the nation and the Army that is not and should not be tied to the acquisition of new equipment. The Army has many problems and challenges that require research that don't require a new piece of equipment to be solved. What are you doing to ensure that the Army Medical Community and the Army Corps of Engineers will continue to have sufficient funds to conduct cross cutting research and research that solves Army problems that is not tied to acquisition?

Secretary ESPER. For the Army, we are committed to the research done by our medical and engineering communities that are aimed at solving Army problems that are not duplicated by other institutions. As part of our reallocation of funds to support modernization priorities, lower priority research programs will be reduced. From the medical research perspective, some programs will be reduced. For combat engineering research, we resourced programs aimed at Protection from Advanced Weapons Effects, Expedient Passive Protection of Critical Assets, Power Projection in Anti-Access/Area Denial Environments, Adaptive & Resilient Installations, and Advanced/Additive Manufacturing but other programs may be cut. The Army has to focus it dollars on our six Modernization priorities.

28. Senator SHAEEN. Secretary Esper, I understand that the Army staff is in the process of developing their recommendations for Military Construction projects for fiscal year 2020 (FY20) to fiscal year 2024. I am concerned that the Army's laboratory research facilities have not had sufficient priority in the past and many of them need to be replaced with modern technologies and efficiencies. Will you ensure that the fiscal year 2020–24 Military Construction (MILCON) Program Objective Memorandum (POM) considers the needs of our laboratories and begins to recapitalize our S&T infrastructure?

Secretary ESPER. Yes, The Army's Infrastructure Planning Team (IPT) infrastructure programing process ensures this with the Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology) representation on the team. This allows the Army's S&T infrastructure requirements to compete on an equal footing with other Army infrastructure requirements.

29. Senator SHAEEN. Secretary Esper, will you ensure that your MILCON Integrated Planning Team (IPT) membership includes voting members that will represent the laboratory community?

Secretary ESPER. Yes, The Army's Infrastructure Planning Team (IPT) infrastructure programing process currently includes a representative from the Office of the Assistant Secretary of the Army (Acquisition, Logistics and Technology). This participation allows the Army's S&T infrastructure requirements to compete on an equal footing with other Army infrastructure requirements.

COLD WEATHER CONFLICT

30. Senator SHAEEN. Secretary Esper, the U.S. Army Cold Regions Research and Engineering Laboratory (CRREL) is conducting valuable research with the goal of improving the readiness of the U.S. military by enhancing its ability to effectively operate in cold weather environments. Do you believe that it is important for the U.S. Army to be ready to conduct large-scale combat operations in a cold weather environment?

Secretary ESPER. Yes. The National Defense Strategy (NDS) directs the Army to prioritize long-term strategic competition with near-peer and peer competitors, while

deterring and countering rogue regimes like North Korea. Our competitors possess immense territory, much of which borders or contains regions where we might face cold weather challenges. Similarly, winter warfare on the Korean Peninsula would involve significant challenges from cold weather. We man, organize, train, equip, and lead the Army to deploy, fight, and win our Nation's wars as part of the Joint Force in any environment; our focus on the priorities given to us by the NDS necessitates an appropriate focus on preparing for cold weather warfare.

31. Senator SHAEEN. Secretary Esper, do you believe that additional cold weather-related research, as well as realistic, large-scale military exercises in cold weather environments, would be useful to the U.S. military, particularly the U.S. Army?

Secretary ESPER. Cold weather related research and exercises conducted in extreme environments ensure that the U.S. Army will not fight unprepared in these conditions.

The Army continues to evaluate future investments to meet Army modernization priorities such as cold weather related research. The Army currently includes cold weather-related research conducted across the Army S&T enterprise. The Fiscal Year 2019 President's Budget request provides an appropriate funding level for this cold-weather-related research. Examples of recent Army S&T efforts include: modeling and high-resolution mapping of permafrost and ground ice to assess impacts on infrastructure, training, and deployment in arctic and sub-arctic environments; modeling of environmental contaminant effects in arctic and subarctic climates; arctic camouflage solutions for both vehicles and dismounted soldiers; and demonstration of improved soldier cold weather protection technologies.

ARMY MTRS GEN II PROGRAM

32. Senator SHAEEN. Secretary Esper, it has now been six months since the Army awarded the Man Transportable Robotics System Increment II (MTRS Inc II) for next generation combat engineer robotics units. As the Army continues to modernize and prepare for emerging threats on the modern battlefield, what is the status of the MTRS Inc II program?

Secretary ESPER. The MTRS Inc II program is progressing on schedule. The Government awarded the development and production contract to Endeavor Robotics on 29 September 2017. Since then, the Government and Endeavor team has completed the Critical Function Analysis (12 December 2017) and the Cybersecurity Preliminary Design Review (28 February 2018), and is currently preparing for the system Critical Design Review (30 May to 1 June 2018).

The MTRS Inc II competitive source selection resulted in contract production pricing well below the robot that the MTRS Inc II is planned to replace. This reduced pricing results in an Army cost avoidance of approximately $127 million and allows the Army to field all systems three years sooner than originally planned. The MTRS Inc II capabilities are on track for meeting or exceeding the Army's operational requirements.

33. Senator SHAEEN. Secretary Esper, has the Army received initial MTRS Inc II robotics systems for testing and/or evaluation?

Secretary ESPER. No, the Army has not yet received the initial MTRS Inc II robotics systems for testing and/or evaluation. However, under the contract timeline, the MTRS Inc II program contractor is scheduled to deliver initial engineering systems in August 2018 for early Developmental Testing and Production Qualification Test (PQT) systems in November 2018. Upon completion of PQT the MTRS Inc II program will begin fielding production systems in fourth quarter, fiscal year 2019.

QUESTIONS SUBMITTED BY SENATOR KIRSTEN GILLIBRAND

TRANSGENDER SERVICE MEMBERS

34. Senator GILLIBRAND. General Milley, can you please provide me with the following information as we discussed during this hearing: Who served on the DOD panel of experts on transgender service?

General MILLEY. The Army representatives on the Panel included the Senior Officer Performing the duties of the Under Secretary of the Army, Mr. Thomas Kelly, the Army Vice Chief of Staff, General James McConville, and the Sergeant Major of the Army, Sergeant Major Daniel Dailey.

35. Senator GILLIBRAND. General Milley, who were the medical professionals consulted by the DOD panel of experts, if any?

General MILLEY. The Panel received support from medical and personnel experts from across the Departments of Defense and Homeland Security. The Medical and Personnel Executive Steering Committee, a standing group of the Surgeons General and Service Personnel Chiefs, provided the Panel with an analysis of accession standards, a multi-disciplinary review of relevant data, and information about medical treatment for gender dysphoria. The Panel also received input from military medical professionals and civilian medical professionals with experience in the care and treatment of individuals with gender dysphoria.

36. Senator GILLIBRAND. General Milley, was consultation from health professionals received verbally or in writing? Please provide any such materials.

General MILLEY. Department of Defense medical providers from all Services who provide health care services for transgender Service members and civilian medical experts in the field of transgender care consulted with the panel in a verbal discussion. Input was provided to the Panel in many forms, both written and verbal.

37. Senator GILLIBRAND. General Milley, please provide the names of individuals who testified before this panel as well as any information that was submitted for consideration in developing this new policy.

General MILLEY. The Army representatives on the Panel included the Senior Officer Performing the duties of the Under Secretary of the Army, Mr. Thomas Kelly, the Army Vice Chief of Staff, General James McConville, and the Sergeant Major of the Army, Sergeant Major Daniel Dailey.

38. Senator GILLIBRAND. General Milley, are you aware of anyone outside the Departments of Defense and Homeland Security who was involved in crafting the final report?

General MILLEY. I know the Panel of Experts consulted with civilian medical experts. However, I am uncertain of who these experts are by name or whether they were involved in crafting the final report.

QUESTIONS SUBMITTED BY SENATOR RICHARD BLUMENTHAL

IMPROVED TURBINE ENGINE PROGRAM (ITEP)

39. Senator BLUMENTHAL. Secretary Esper and General Milley, does the Improved Turbine Engine Program (ITEP) remain the Army's number one aviation modernization priority? What is the near and long term development timeline for ITEP? Are you planning to fully fund ITEP in fiscal year 2019 and beyond?

Secretary ESPER and General MILLEY. The Improved Turbine Engine Program (ITEP) remains a priority for our current fleets, providing our attack and utility helicopter fleets with significant increases in performance, fuel efficiency, and sustainability. ITEP is a bridge from our highly capable current fleets to Future Vertical Lift (FVL) platforms and has the potential to power certain FVL variants. We believe ITEP will achieve milestone (MS) B by 1st quarter fiscal year 2019 (FY19), which will allow development, building and testing of the capability. We anticipate that ITEP will achieve MS C in fiscal year 2024, which will enable low rate initial production and initial operational test and evaluation to support initial operational capability in fiscal year 2027. ITEP is fully funded in fiscal year 2019 and across the Future Years Defense Program.

QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

ACQUISITION REFORM

40. Senator HIRONO. Secretary Esper and General Milley, the Army's recent history with large acquisition programs, specifically the Future Combat Systems and Ground Combat Vehicle programs, has not been very successful. Your testimony outlines a very ambitious acquisition plan to increase the Army's capabilities across the force, and as you said, its success is critical to maintaining overmatch against near-peer competitors. What lessons has the Army learned from the failed programs of the recent past and what changes have been made to make current modernization plans successful?

Secretary ESPER and General MILLEY. The Army remains committed to continuous improvement in our acquisition process to deliver overmatch capabilities to our warfighters rapidly, effectively, and affordably. We have taken a hard look at the many expert reviews of cancelled Army programs of the recent past and as a result,

are taking efforts to address a lack of unity of command, unity of effort, efficiency, cost effectiveness, and leader accountability in our current acquisition system. The Army is moving toward utilizing more prototyping efforts and experimentation in an effort to not overestimate technology readiness levels for programs. If the Army is going to fail, we need to be able to fail early and learn quickly in the early stages of a program versus later when the mature product is getting ready to be fielded. As part of that process, we must put equipment in the hands of the soldier earlier so they are involved from the very beginning.

In order to help accomplish these initiatives, we have established Cross Functional Teams (CFTs) to address the top priorities to contend with the full spectrum of existing and emerging threats. These CFTs integrate S&T, R&D, acquisition, sustainment, and warfighter perspectives to establish a sound footing for modernization programs. The CFTs will fall under our new Army Futures Command (AFC), bringing together these various elements of the modernization enterprise onto one team. Having all the stakeholders under one command will allow us to better define requirements and better ensure we go after technology that is achievable.

MISSILE DEFENSE

41. Senator HIRONO. Secretary Esper and General Milley, in the fiscal year 2018 NDAA the Committee directed the Army to transition ownership of the Terminal High Altitude Area Denial (THAAD) missile defense system from the Missile Defense Agency (MDA). In January, Lieutenant General Dickinson mentioned that the Army is working on an updated Integrated Air and Missile Defense Strategy. How is the transition of THAAD going with MDA?

Secretary ESPER and General MILLEY. The transition of Terminal High Altitude Area Denial (THAAD) from Missile Defense Agency (MDA) to the Army is still under discussion and several issues related to resources and authorities have not yet been resolved. One of my greatest concerns is that the transfer of THAAD to the Army is accompanied by the full amount of funding to modernize and sustain the system, as well as preserve the required munitions. Without that, the Army will incur a very significant resourcing bill that would compete with our six Modernization priorities.

We have had RAND examine this transition and they found that there are key risks of large scale transfer such as performance of the BMDS, disruption of pending Foreign Military Sales cases, and potential unfunded requirements for Army and MDA. The study found that there is an inherent tradeoff between focusing MDA on the future (transfer) versus the performance of the Ballistic Missile Defense System (do not transfer). The Army, MDA, and the Office of the Secretary of Defense continue to evaluate all options.

42. Senator HIRONO. General Milley, was the Army's Integrated Air and Missile Defense Strategy undertaken within the context of the national-level Missile Defense Strategy expected to be released soon or was it a stand-alone effort?

General MILLEY. Space and Missile Defense Command (SMDC) is leading the Army effort to develop the updated Air and Missile Defense (AMD) strategy. This effort will be informed by the results of the DOD Missile Defense Review and other strategic documents and is currently expected to be released before the end of the calendar year. SMDC is working closely with the Army National Guard, Joint, and Coalition partners on the AMD way ahead.

43. Senator HIRONO. Secretary Esper and General Milley, what is your top priority for improving the capability of the Air and Missile Defense System?

Secretary ESPER and General MILLEY. Maneuver Short Range Air Defense (M–SHORAD) is our top Air and Missile Defense System priority. M–SHORAD will defeat a wide range of aerial threats including rotary wing, fixed wing and unmanned aerial systems. M–SHORAD will increase survivability of our maneuver formations and improve our ability to fight and win against near peer competitors. We have accelerated development of the initial M–SHORAD capability and will field 4 battalions by fiscal year 2022.

MILITARY CONSTRUCTION

44. Senator HIRONO. Secretary Esper and General Milley, the cost of construction in Hawaii and other parts of the Pacific is acknowledged to be higher than in many parts of the continental United States. It is encouraging to see that the Army is planning for a MILCON revitalization effort for Army facilities in Hawaii. I have visited many Army facilities in Hawaii and highly encourage these MILCON projects and revitalization efforts which will impact the readiness, safety and morale

of men and women serving in our Army. While the costs are higher, will you commit to the extent possible, to ensure that the men and women serving in Hawaii have comparable facilities such as company operations facilities and quarters as their fellow soldiers do in other parts of the country?

Secretary ESPER and General MILLEY. Yes, installations provide critical infrastructure and services that generate combat power and keep the Army ready. The Army recognizes some infrastructure is failing and deficient in key categories within Hawaii. As a result, the Army is addressing these critical shortages through dedicated funding and attention.

PACIFIC PATHWAYS

45. Senator HIRONO. Secretary Esper, the Pacific Pathways program has been a great way to build military to military partnerships in the Asia-Pacific. Does your budget request for fiscal year 2019 maintain support or expand this program?

Secretary ESPER. The Pacific Pathways provides our Army in the Pacific with unique training opportunities by connecting a series of security cooperation exercises to maximize readiness and achieve regional engagement objectives. The fiscal year 2019 budget request increases our Army investment in Pacific Pathways by $20 million to $61.8 million. The increase ensures U.S. Pacific Command a robust, versatile force, forward-deployed of the International Date Line for up to nine months each year. These opportunities generate interoperable combat-ready units and support regional security and stability. The Pacific Pathways program builds our warfighting readiness, increases our collaboration with regional partners and provides relevant land forces support to the Pacific Area of Operations.

IN REVIEW OF THE DEFENSE AUTHORIZATION REQUEST FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, APRIL 19, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

NAVY POSTURE

The committee met, pursuant to notice, at 9:31 a.m. in Room SD–G50, Dirksen Senate Office Building, Senator James M. Inhofe, presiding.

Committee Members present: Senators Inhofe, Wicker, Fischer, Cotton, Ernst, Tillis, Sullivan, Perdue, Graham, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Our meeting will come to order.

The committee meets today to receive testimony on the posture of the U.S. Navy and its fiscal year 2019 budget request.

We welcome our witnesses, the Honorable Richard Spencer, Secretary of the Navy—welcome; Admiral Richardson, the Chief of the Naval Operations (CNO); and General Neller, Commandant of the Marines. Welcome, all three of you. We thank you for your dedicated service.

The National Defense Strategy aims to build a more lethal and ready force and reform the Department of Defense for greater performance affordability. We look forward to hearing from each of you as to how the Navy and the Marine Corps plan to support these objectives.

I was pleased to see requested procurement increases that align with the new strategy, including 11 more ships, dozens of aircraft, and expanded investment in long-range precision fires, air defense, electronic warfare, and other critical capabilities over the next 5 years. I continue to be concerned about the readiness, with the number of recent air and sea mishaps and the tragic loss of life in results. And I hope you have the chance to talk about that. You know, when we have this accelerated mishaps that we have had, obviously it has something to do with OPTEMPO, with maintenance, with training. It's difficult to identify just where that is. However, I think it's something that we need to be talking about.

I'm encouraged to see the Navy and the Marine Corps prioritizing manning challenges during a time when our sailors and marines have been asked to maintain a high operational tempo. We look forward to hearing where you would use additional end strength to fill in gaps at sea and support priorities outlined in our National Defense Strategy.

Finally, recognizing service in the military is inherently difficult, I'd like to ensure we're doing all the things that we can do to relieve stress on our sailors, marines, and families, and prioritize the readiness of the force.

Senator Reed.

STATEMENT OF SENATOR JACK REED

Senator REED. Well, thank you very much, Mr. Chairman.

I—and let me welcome Secretary Spencer and Admiral Richardson and General Neller. Thank you, gentlemen, for your service over many, many years, and to all the men and women of the Department of the Navy and their families. We're grateful for that service, and please give them our appreciation.

As the leaders of the Navy and the Marine Corps, you face huge challenges as you strive to balance the need to support ongoing operations and sustained readiness with the need to modernize and keep the technological edge so critical to military success. The Department of the Navy face serious readiness problems caused by deferred maintenance, reduced steaming and flying hours, and canceled training and deployments. We are all keenly aware of the number of ship collisions, and I want to work with the Navy to implement changes that should help to prevent such incidents in future operations.

These challenges have been made particularly difficult by the spending caps imposed in the Budget Control Act. Fortunately, we have a budget deal under the defense top line for 2 years, but additional challenges loom on the horizon, as the Budget Control Act will be back in force for fiscal year—fiscal year 2020. I look forward to hearing your testimony on progress you're making in correcting these readiness problems while the funding levels are increased.

All areas of our naval forces are maintaining extremely high operational tempo. Demand is overwhelming for attack submarines, air and missile defense cruises, destroyers, and strike fighter inventories. In addition, the Navy is now in its sixth year of operating with fewer than the required 111 aircraft carriers. During the next decade, as a first priority, the Navy will need to buy the new *Columbia*-class ballistic missile submarines to replace the *Ohio*-class submarines. I am interested in hearing how the Navy is managing current demands on its assets, and how it plans to manage future modernization demands, particularly how it is using the additional authorities that are granted under the National Sea-Based Deterrence Fund, beginning with the *Columbia*-class program funding in fiscal year 2018.

The Marine Corps continues to make modernization of ground vehicles a priority by balancing the procurement of new systems while upgrading existing platforms to meet current operational needs. The amphibious combat vehicle will replace the aging inventory of assault amphibious vehicles in order to provide marines

with increased force protection and enhanced lethality. The Marine Corps is also partnering with the Army to develop the joint light tactical vehicle, the JLTV, to replace the Humvee. I would welcome an update from our witnesses on the status of these programs.

Last year, we were presented with a document that identified a new force-structure goal, as recommended by the Chief of Naval Operations. That was the new Force Structure Assessment (FSA). The Navy's current high-level operations contributed, in part, to the CNO's conclusion in this assessment that calls for increasing the goal for the Navy fleet from 308 ships to the level of 355 ships. The Navy submitted a new 30-year shipbuilding plan with the fiscal year 2019 budget request. While the plan would lead to increasing the size of the fleet, it would not meet the new 355-ship goal. This 30-year plan would achieve the attack submarine force goal of 66 boats in 2048. However, in the same year, we would have a force of nine aircraft carriers, compared to a goal of 12 carriers, and 92 large service combatants versus the goal of 104. We need to understand the steps the Navy will be taking to address these shortfalls.

In addition, a significant factor that bears on our discussions this year is that Secretary Mattis has published a new Defense Strategy that is intended to guide force-structure development and modernization programs through increased capability. It is reasonable to speculate that the implications of this new Defense Strategy under the Department of the Navy could yield increased demand for naval forces and complicate the Navy's plans to achieve its force-structure goals. I am interested in hearing how the Department is implementing these strategy decisions, and how this might affect future force-structure goals of the Navy and the Marine Corps.

Again, I thank the witnesses and look forward to their testimony.

Thank you.

Senator INHOFE. Thank you, Senator Reed.

Let's start with you, Admiral. Your entire statement will be made a part of the record, but—so, we'll be anxious to hear your opening statement, and then get to your questions.

Why don't we start with you, Secretary Spencer.

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

Secretary SPENCER. Thank you, Senator, Ranking Member Reed, distinguished members. It—I want to thank you for the opportunity to come before you today and present to you the posture of the Department of the Navy.

It's an honor—truly an honor to sit here with Admiral Richardson and General Neller, who, over the last 9 months, ladies and gentlemen, have truly become my business partners in tackling the issues that are facing the Department of the Navy, specifically as they pertain to my title 10 responsibilities.

On behalf of the Navy and Marine Corps team, thank you for the effort put forth by Congress in reaching a bipartisan agreement to support the President's Budget request. We completely understand and appreciate that this stretched people to the farthest extent of

their comfort zone, and we are very supportive of this and just want to know that we thank you all for your efforts, collectively.

We look forward to receiving these resources as soon as possible to enhance the readiness and lethality across the team while expending them in a focused manner in support of the National Defense Strategy. Today, 94,000 sailors and marines and 101 ships 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, assuring access to overseas regions, defending key interests in those areas, protecting United States citizens abroad, and leveraging—and preventing adversaries from leveraging the world's oceans against us 24 hours a day, 365 days a year. Our budget request enhances readiness and continues increasing capability and capacity of the Navy-Marine Corps team. As directed in the 2018 National Defense Strategy, our budget submission supports a more lethal, resilient, agile force to deliver and defeat aggression by peer competitors and other adversaries in all domains across all spectrums.

My priorities for the Department center on three categories: *people, capabilities, and process.*

The ability to accomplish our mission relies on people. Eight-hundred-thousand sailors, marines, Active Duty and Reserve, and their civilian teammates and families, comprise that number. We are building a more lethal, agile, talented, and rapidly innovating workforce as we speak.

The ability to accomplish our mission relies on having capabilities necessary to fight tonight, challenge competitors, deter our rivals, and to win. We're investing in modernization of key capabilities and new technologies to attain this goal.

Lastly, the ability to accomplish our mission relies on having efficient processes in place that will speed the value and ability to support our warfighters in more effective and efficient manners.

We are creating a continuous-improvement mindset in both our culture and management systems to deliver performance with affordability and speed. I deliver to you today a plan with urgency. We cannot and will not allow our competitive advantage to erode. With your guidance and help, these planned investments will provide combat-credible maritime forces for the future. We will ensure we are good stewards of the money and resources you give us. We will drive efficiency across the Department to maximize every dollar and invest smartly in order to leverage the return on our investments.

I look forward to your questions.

[The prepared statement of Mr. Spencer follows:]

PREPARED STATEMENT BY THE HONORABLE RICHARD V. SPENCER

INTRODUCTION

Chairman McCain, Ranking Member Reed, 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 President's Budget 2019 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 President's Budget 2019 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 President's Budget 2019 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 fiscal year 2019 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 President's Budget 2019 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. President's Budget 2019 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 fiscal year 2019. Throughout the FYDP, the Department added a net total of 11 battle force ships.

With sustained funding and SLEs, President's Budget 2019 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 fiscal year 2023.

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 fiscal year 2018.

Navy and Marine Corps Expeditionary Forces will soon receive the next generation protected mobility. The Joint Light Tactical Vehicle begins fielding in 2019. In fiscal year 2019, 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 fiscal year 2019 budget request acknowledges and begins to ad-

dress 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 fiscal year 2019 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 fiscal year 2020 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 fiscal year 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 fiscal year 2019 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.

Senator INHOFE. Thank you, Mr. Secretary.
Admiral Richardson.

STATEMENT OF ADMIRAL JOHN M. RICHARDSON, USN, CHIEF OF NAVAL OPERATIONS

Admiral RICHARDSON. Senator Inhofe and Ranking Member Reed, and distinguished members of the committee, thank you for the opportunity to testify today to discuss our Navy.

I'm honored to be here with Secretary Spencer and General Neller, two great leaders with whom I am working to increase the warfighting lethality and readiness of our Navy-Marine Corps team.

That Navy-Marine Corps team is the Nation's response force, and a strong and responsive Navy matters to America's security and economic prosperity now more than ever. As our National Defense Strategy makes clear, more naval power is essential in a new era of great-power competition. With a rising China and a resurgent Russia, America no longer can enjoy a monopoly on seapower or sea control. Meanwhile, regimes like North Korea and Iran threaten global stability.

Given these challenges, it's absolutely critical that we increase American naval power with a sense of urgency, just as Secretary Spencer said. Every day, we must earn our place as the world's best Navy. To do that, we must take a balanced approach to building the Navy the Nation needs.

The Navy the Nation needs requires a bigger fleet, as you said, Senator, more ships, submarines, aircraft, and special operating forces. Congress agreed with the conclusions of several thoughtful studies, and a 355-ship Navy is the 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 eventual number of ships to build, we can all agree on one thing: the Navy must get bigger, and we must start building now.

The Navy the Nation needs requires a better fleet, more capability achieved through modernization, networking, and agile operating concepts. The Navy the Nation needs requires a ready fleet, more at-sea time, more flying, more maintenance, and more weapons of increased lethality that go faster and farther. All of these things demand a talented force of sailors and civilians, with officers of character and competence to lead them.

Thank you, to the efforts of this committee and the Congress, the readiness funds in 2017 and the enactment of the fiscal 2018 authorizations and appropriations has put us on a strong trajectory towards increasing American naval power. As we discuss the 2019 budget request today, that will help us achieve a bigger, a better, and a more ready fleet, I commit that your Navy will be a good steward of every precious taxpayer dollar.

Finally, on behalf of all the sailors serving around the globe, I think we all agree and wish Senator McCain a speedy recovery. I look forward to being grilled by him in this room in the future. I

am grateful for his work, and that of the entire committee, to increase our naval power.

We've started down a good course, and I look forward to navigating with Congress to build the Navy the Nation needs, a Navy lethal to our enemies, committed to our partners, and safe for our sailors.

Thank you. I look forward to your questions.

[The prepared statement of Admiral Richardson follows:]

PREPARED STATEMENT BY ADMIRAL JOHN M. RICHARDSON

Chairman McCain, Ranking Member Reed, 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 percent 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 United States 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 fiscal year 2019 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) and the fiscal year 2018 defense appropriations 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 fiscal year 2017 we arrested readiness decline with the Request for Additional Appropriations, and the fiscal year 2018 enacted appropriations and fiscal year 2019 budget request further restore readiness while beginning to increase warfighting capacity and capability. The fiscal year 2019 budget submission is strategy-based, seeking a $2.4 billion increase for the Navy over fiscal year 2018 enacted levels. The

single most effective way to maintain the strategic momentum started in fiscal year 2017 and fiscal year 2018 is to enact the fiscal year 2019 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 fiscal year 2019, this budget requests over $55 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), President's Budget 2019 funds construction of 54 battle force ships—11 more than the President's Budget 2018 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. 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. President's Budget 2019 includes $3 billion in ship construction (SCN) funds to ensure lead *Columbia*-class ship construction commences on time in fiscal year 2021, 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 fiscal year 2019 budget includes almost $18 billion for research and development in addition to other modernization efforts. For example, President's Budget 2019 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 fiscal year 2019, the Navy will have 41 ships modified for BMD missions to defend our ships and the Homeland. President's Budget 2019 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 fiscal year 2018 enacted 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 fiscal year 2019 budget builds on the progress made in fiscal year 2018 by requesting an additional almost $500 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 E/F 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. 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. Finally, we are sharpening our focus on countering unmanned threats through programs such as the Surface Navy Laser Weapons System, as well as targeted experimentation, wargames, and innovation competitions to more rapidly integrate capability against these continuously emerging threats. In fiscal year 2019, we are investing over $300 million in research and development to develop and field laser weapon systems which include advanced capabilities to destroy unmanned threats. Additionally, our fiscal year 2019 budget requests $60 million to improve existing systems and other equipment to be able to identify and destroy unmanned aerial systems.

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 fiscal year 2019 budget requests an additional $1.6 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 fiscal year 2019 budget adds about 1,400 critical civilian billets above current fiscal year 2018 estimates 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 fiscal year 2019 budget continues the readiness and wholeness commitments we made in fiscal year 2017 and fiscal year 2018 by funding ship operations to 100 percent of the requirement and ship depot maintenance to 100 percent of executable capacity. It also funds flying hours to the maximum executable requirement and increases aviation depot maintenance funding to 92 percent (the maximum executable capacity) as we grow capacity on our flight lines. In addition, $1.9 billion requested in fiscal year 2019 for military construction will fund 33 Navy projects—the largest such request in over a decade. Recognizing the inherent link between readiness and lethality, the budget also increases procurement of high-end ship-, sub-, and air-launched munitions over the FYDP, 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). 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 fiscal year 2019 budget also includes 12.7 percent 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 fiscal year 2019 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 fiscal year 2019

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 United States- and overseas-based destroyer squadrons across the FYDP from 64 percent to 100 percent 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. 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 steadfast Navy for our allies and partners, and a safe Navy for our sailors.

Senator INHOFE. Thank you, Admiral.

General Neller.

STATEMENT OF GENERAL ROBERT B. NELLER, USMC, COMMANDANT OF THE MARINE CORPS

General NELLER. Chairman Inhofe, Ranking Member Reed, I would just associate myself with the comments of the Secretary and the CNO.

You expect a lot of your marines, and 34,000 of them are deployed right now outside the continental United States, doing what you expect them to do: prepare to fight and win. We appreciate the appropriation, and we're hopeful that we'll get the same in 2019 so that we have consistency and stability in our budgeting process.

That's—I'll curtail the rest of my comments, because I think it's more important we get to the questions. I look forward to your questions.

[The prepared statement of General Neller follows:]

PREPARED STATEMENT BY GENERAL ROBERT B. NELLER

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 weap-

on, 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 President's Budget 2019, *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 President's Budget 2019 submission—a 7 percent 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 fiscal year 2018, 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 fiscal year 2019 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 fiscal year 2019 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 fiscal year 2016 and fiscal year 2017, 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 (MCRCO) accomplishes that end, seeking emergent and disruptive technologies to increase our lethality and resiliency. The MCRCO leverages fiscal year 2016 and fiscal year 2017 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.

President's Budget 2019 provides $13.8 billion towards our investment accounts, nearly 32 percent of our total request to modernize the force. This represents a 19 percent increase in investment funding over our fiscal year 2018 budget submission. The President's Budget 2019 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. President's Budget 2019 continues the efforts started by the fiscal year 2017 Request for Additional Appropriations and President's Budget 2018 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.

President's Budget 2019 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 oper-

ational 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. President's Budget 2019 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.

President's Budget 2019 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. President's Budget 2019 provides $13.1 billion towards our operation and maintenance accounts, over 30 percent 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 fiscal year 2017 RAA provided the investment needed to arrest this decline, and the President's Budget 2018 and President's Budget 2019 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. President's Budget 2019 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 fiscal year 2019 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. President's Budget 2019 works to assist with this by providing support to our comprehensive aviation recovery plan that, *if suffi-*

ciently resourced and supported by our industrial base, recovers the force to an acceptable readiness level by fiscal year 2020 with a ready bench by fiscal year 2022. Further, President's Budget 2019 plans to fund aviation readiness accounts at maximum levels and spares at 93 percent 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. President's Budget 2019 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 fiscal year 2033 when we reach the minimum amphibious ship requirement of 38 per the fiscal year 2017 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 President's Budget 2019 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 President's Budget 2019 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. President's Budget 2019 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. President's Budget 2019 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). President's Budget 2019 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. President's Budget 2019 provides $15.7 billion towards our manpower accounts, over 36 percent 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 Readi-

ness. 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.

Senator INHOFE. Well, you know, your last comment was significant, when you say in fiscal year 2019. My concern is, fiscal year 2020 and fiscal year 2021. I think that we—maybe during the course of these questions, you'll be asked, What happens if we don't continue what we started with the 2-year budget? It could be a disaster.

Let's start off with China a little bit. A few of us—four of us on this committee just got back recently from South China Seas, visiting with our allies there and just—it's—most people don't know what really is going on with China in that part of the world. You know, they hear about the islands that are out there, and they talk about reclaiming islands. It's not reclaiming, because there's nothing to reclaim. It's building, creating, and now they're up to seven different areas, very important areas for our movement in that part of the world. Everything that we see there is as if they're preparing for World War III. Everything's military—not offenses, it's defense, and it's really gotten the attention of our allies.

One of the things that I think all of us would agree on is that, whether it's the Philippines, South Korea, Taiwan, Japan, they're all concerned and kind of covering both bases. This sounds pretty extreme. But, it's almost as if they're trying to decide whose side are they going to be on when this happens. I mean, that's the kind of preparation that's taking place, and we know that China is producing at least a dozen warships a year, developing new long-range weapon systems and fifth-generations.

So, I'd like to have—let's start with you, Admiral Richardson. What do you see those potential challenges in—what are they up to in this, what they refer to as—they were reclamation projects that they have, that now exceeds, what, 3,000 acres, I guess?

Admiral?

Admiral RICHARDSON. Sir, I think you've characterized that exactly right, and I would say that the Chinese have been very clear about what they're up to with their discussions of the Belt and Road Initiative, which may begin in the South China Sea, but actually extends around through the Straits of Malacca into the Indian Ocean, up into the Middle East, and into Europe. And so——

Senator INHOFE. Yeah. No, it's all around. We understand that. We know what they're doing right now in Djibouti. This is the first foreign-based operation that they've had, I guess, in recent history. And so, it's not just there, it's in—it's certainly in Europe, the same. But, that's a place where we recently were, and that is—it really does affect the Navy's attention more than the other areas.

How about you, Mr. Secretary? What's your thinking about—what are they up to over there in the South China Seas?

Secretary SPENCER. Well, Senator, I—we know what their activity is in the South China Seas. I'd like to actually elevate it and tell you what they're—what we're observing they're doing across the whole spectrum.

Senator INHOFE. I understand that, yes.

Secretary SPENCER. Just the other day, we were about to let a contract to one of our primes, and we found out that, in that division that we were going to contract to, Wahweh was a joint venture partner. We turned around and said, "Whoa, stop the horses. We'd like to know what this means." Talked to the prime. The prime said, "No problem, we're not going to use any of the assets of Wahweh North Software." It was a very enjoyable call. Then all of a sudden we said, "Great. Can we see the governance documents of the joint venture?" Things got very frosty. We have now put prophylactic language in this agreement to prevent any creeping further.

I bring this up as an example, so it's not just the South China Sea, it's across the full spectrum that China is coming at us.

Senator INHOFE. I agree. This is fresh in our minds right now, and it's something very overt, and it's one that is considered serious enough in that part of the world that our allies—historically, our allies are kind of divided as to what they think, where their allegiance may be changed to. That's very concerning.

Let's talk a little bit about the pilot shortage. I know—I understand it's not quite as serious with you guys as it is with the Air Force. But, are you looking down the road, now that we've made some changes, and we're looking at 2 years—in fiscal years 2018 and 2019, we're going to be able to make some changes—any—express your concern right now. But, maybe with you, General Neller, in the Marines, or——

General NELLER. So, we share the same concern. Our numbers are not as drastic or dramatic as the Air Force, but we have instituted a bonus that we haven't paid for many, many years. And we've extended it out to 16 years. We're looking at different ways to take advantage of people that might be leaving, to keep them in the Reserves. We're in direct competition with the commercial airlines, because they have a huge pilot shortfall around the world. It's not just pilots, it's maintainers. We just offered a reenlistment bonus to our younger maintainers, and a significant number of them took it, which will give us some stability, because that's an experience base that you——

Senator INHOFE. What about flying hours?

General NELLER.—Senator, they've gone up. I can show you——

Senator INHOFE. Okay, that's good.

General NELLER. Probably 4 hours per model-type series across the force in the last year. I saw a story the other day that said it was really only the forward-deployed forces, so I got the data call on that. Actually, depending upon what model-type series you're talking about, some of the home-station forces are actually flying more than the forces that are forward deployed. Is it where we want to be? No, and this budget that you have given us will allow us to create a steady stream of parts and spares. Because a lack of parts and spares is the number-one downing requirement for aircraft. Again——

Senator INHOFE. Well, in the Marines, specifically, the F–18 has been a problem, in terms of what's ready to fight. I know that that's gone up from about 40 to 50 percent right now. Do you project getting on up where you need to be, which I understand to be about 65 percent?

General NELLER. We want to get it as high as we can. We funded, in this budget—this budget funds parts and spares and aviation maintenance at a higher level than we ever have before. So, is—there's a certain flash-to-bang time on that. The Secretary has done some work with the depots to require them to provide back to us, upon completion of depot maintenance, an aircraft in a better state of condition so that it's more ready to fly at a sooner time.

Senator INHOFE. Okay.

General NELLER. We're resetting the 53s, so you are correct, the two most distressed communities in marine aviation are F–18s and CH–53s.

Senator INHOFE. The Secretary and I share in our backgrounds some of these things, and I think you pretty much agree with the comments that he's making.

Thank you.

Senator Reed.

Senator REED. Well, thank you, Mr. Chairman.

Mr. Secretary and Admiral Richardson, I mentioned, in my comments, the National Sea-Based Deterrence Fund. Could you tell us how you're using that to provide for the efficient acquisition of *Columbia,* which is a—not only a big-ticket item, but actually essential to the national security? Whoever wants to go first.

Secretary SPENCER. Senator, I'll go first on that.

Yes, that vehicle does provide us authorities that do provide us the flexibility to address *Columbia* specifically, which is going to be, as you know, the biggest modernization leg of the nuclear triad. It is our number-one priority in the Navy. That—like I said, that vehicle has been very helpful in providing us authorities for future buy, long-lead buy to keep *Columbia* on track. We will continue to use it, the authorities in there, primarily. I'll tell you that we now have no margin—no time margin at all involved in *Columbia.* We are marking this program with great sight, going forward, because we can't have any slippage.

Senator REED. Right.

Admiral RICHARDSON. I would just——

Senator REED. Admiral.

Admiral RICHARDSON.—pile onto that, sir. As I see the combination of appropriations and authorities that are going to be required to get this major acquisition program delivered on time, I see that the flexibility of the National Sea-Based Deterrent Fund both lowers cost and lowers risk, at the end of the day. You can buy material at its optimum time rather than the last time, and it allows you to move things to the left as much as possible to buy margin back into the schedule.

Senator REED. I only would ask, if there are additional authorities or additional techniques that you want to apply because of the importance of this program, please let us know as we go forward.

Commandant—General Neller, the Marine Corps has a series of accusations and cases of sexual misconduct. You're not the only

service that's facing this. But, some of them have been quite notorious—Marines United, a recent incident involving a colonel who had a record of misbehavior and—but was only discovered when he abused a young child; and then you have, also, a marine brigadier general whose responsibility included sexual assault prevention, and he made some comments that are—I think, have drawn appropriate criticism. Can I ask you very seriously—and with the difficult challenge that you face, is—how are you addressing a culture that might be contributing to this issue?

General NELLER. Senator Reed you and I have talked about this, and I appreciate the question.

Aside from those events, as disturbing as they are, I think today you look at our Marine Corps, we're as diverse, as integrated and inclusive as we've ever been. I would give credit to members of this committee for holding the mirror up and making us look at ourselves and ask ourselves some hard questions.

So, since the Marines United, we've clarified policies and rules and regulations, so all marines know what's expected of them. We had to clarify commanders, what they could do to hold people accountable. That doesn't mean we're perfect. I've had a couple of my senior officers—one was an allegation and one was investigated by ourselves, and was substantiated, where I had to say that I didn't have confidence in them to lead their organization. They are not the majority. They're not even close to the majority, and yes, you should expect more from a more senior officer.

So, are we where we want to be? Are we where you want us to be? No. Are we in a better place than we were a year ago? I believe we are. That's on me, and I'd just remind everybody that, in my heart of hearts, I've gone out and talked to thousands and thousands and thousands of marines. I'm not going to use as an excuse that 62 percent of the Marine Corps is 25 years old or less. That's no excuse. But, it's going to take us some time, and I assure you—give you my word that anyone who does violate the rules, regardless of whether they're a general or a private, they're going to be held accountable. With the help of this committee, we'll continue to work to make ourselves even more inclusive than we are today.

Senator REED. General, are you concentrating on senior leadership? I know you're addressing the entire Corps, but making a special effort to ensure that senior leadership is fully attuned with your views?

General NELLER. Yes, Senator.

Senator REED. Thank you.

One other issue, too, is, Do you reflect adherence to these standards specifically in the efficiency reports for marines? Is there something in the efficiency report that the rater would have to indicate yea or nay, follows Marine Corps policy regarding sexual harassment, sexual conduct?

General NELLER. If someone—obviously, were to do something which would cause them to—the commander, their senior. to lose confidence, then they would receive an adverse report. But, in the actual report, itself, that was something that would have to be in the narrative. We are in the process of reviewing our, what we call, fitness reports or OERs, and one of the categories we're going to put in there is something to do with diversity. Because I believe

that we need a command climate. We're in a tough business, and it's taken some people some adjustments. Those that can't adjust are going to have to either get onboard or get out. But, to answer your question, right now our fitness report does not reflect that unless the reporting senior chose to write it in. But, in the future, it will.

Senator REED. Well, I think that is a—an important step.

My time is expired. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Reed.

Senator Cotton.

Senator COTTON. Thank you, Mr. Chairman.

Thank you, gentlemen.

Admiral Richardson, I want to discuss the littoral combat ship (LCS). In my view, it's some concerning news. According to a U.S. Naval Institute story published this week, the Navy will not deploy an LCS in 2018, 11 LCS ships have been delivered to the Navy as today, but we'll have none deploy. Two days ago, at a Seapower hearing, Admiral Mertz testified, quote, "The typical deployment model is three to five ships to one, to keep one deployed. So, this is really just math. There's going to be gaps that'll fill in over time. We're not concerned about that," end quote.

However, in September, just 8 months ago, the Commander of Naval Surface Forces in the Pacific Fleet said that you can maintain three to four littoral combat ships deployed when you take on the Blue/Gold crew system. What is the answer, here, to the actual deployment ratio?

Admiral RICHARDSON. Senator, as you know, the littoral combat ship has been a program that has been through some troubled times. I would say that, in the past, we probably pushed that ship out forward deployed a little bit ahead of its time, before the program had stabilized and we'd done the appropriate testing and gained the confidence. As soon as I got in as the Chief of Naval Operations, I directed the Commander, Naval Surface Forces, to take a look at that program, rationalize it, and make it look a lot more like a normal shipbuilding program and a ship-operating program. So, this is what led to changes in the maintenance approach, changes in the Blue/Gold crewing, the way that we are going to home port these squadrons, and forward deploy them.

The year 2018 is really a reflection of that shift. And so, it is—starting in 2019, we're going to start forward deploying those. They'll be sustainable, they'll be more lethal by virtue of the enhancements we're putting on those littoral combat ships. We have 24 deployments planned between 2019 and 2024. And so, you know, it really—2018 is a reset year to get maintenance and manning in place so that we can deploy this in a sustainable fashion.

Senator COTTON. So, starting in 2019, then, which of those ratios will be correct? Will we be able to keep three out of four ships deployed, or one-fifth to one-third of those ships deployed?

Admiral RICHARDSON. Senator, I'll tell you what. There's a little bit more to the math. If I could get back to you for the record on exactly how that ratio works out, I'll be happy to show you the way this all——

Senator COTTON. I would appreciate that——

Admiral RICHARDSON. Yes, sir.

Senator COTTON.—for the record.

[The information referred to follows:]

Admiral RICHARDSON. When at full maturity, the Blue/Gold crewing model implemented on Littoral Combat Ships will enable a higher forward presence rate than can be achieved in a traditional single-crew model. LCS will initially be organized into six, four-ship divisions—three per coast (Mayport, FL and San Diego)—with focused mission areas of anti-surface warfare (SUW), mine countermeasures (MCM), and anti-submarine warfare (ASW). Within each four-ship Division, the Blue/Gold Crew concept generates two ships forward, a third in either maintenance, pre-deployment training or deployed, and a fourth serving as a dedicated training ship to certify the six Blue/Gold crews that will man the three deployable ships of each cohort. This new divisional structure is designed to provide Fleet Commanders approximately two (out of every four) ships for continuous mission capability. Blue/Gold deployments will begin in 2019 and increase in numbers as additional LCS join the fleet.

Senator COTTON. There's a second question I want to ask, as well. Even by Admiral Mertz's statement of one-fifth to one-third of ships deployed, we should still have two or three LCS ships deployed this year. I think you may have just answered that question, though, by saying that this is a reset year to try to get——

Admiral RICHARDSON. Yes, sir.

Senator COTTON.—to your future model.

Admiral RICHARDSON. This is part of that plan that Surface Forces put together.

Senator COTTON. We've spent $6 million now on these ships. I think the taxpayer deserves to have them out, performing their job.

Admiral RICHARDSON. Could not agree more.

Senator COTTON. I hope that's the case, starting next year.

General Neller, I want to speak to you about some changes in foot-march standards at the infantry officer course. It was recently changed from requiring infantry officers to pass five out of six evaluated foot marches to only three evaluated foot marches. I find that a little worrisome, given that the overall physical fitness testing standards have increased for everyone, to include enlisted marines, which means we may be lowering standards for our infantry leaders compared to our enlisted marines on something that is, I would say, a pretty core competency for an infantry leader. I assume you would agree with that?

General NELLER. Senator, there was a change, because we looked back at what was going on at infantry officer course. At one time, you had to pass five of six events to graduate. A couple of those events, we could not relate them to events in the training and requirements manual for infantry. So, I got a group of my senior infantry leaders together and I said, "Why are we doing what we're doing?" One event in particular, "I thought that I wouldn't think I would ever have anybody do that." So, they came back to me and they said, "Look, these are three that equate. We're still doing all of them. They're still all done. They are all still a part of the overall"——

Senator COTTON. But, the—but fewer are being evaluated.

General NELLER. They're all evaluated.

Senator COTTON. Evaluated is a——

General NELLER. They're all evaluated, and overall is the performance of that officer to graduate from that course. But, three of three, now, to include the one with the heaviest load and the time

and duration, those three all have to be passed in order for an officer to graduate from that course.

Senator COTTON. Let me just read you a statement from General Bohn, the commanding officer of the Marine Corps Training Command. He said, quote, "The principal driver behind us making modification to the course, it was not about lowering attrition, it was about making students more successful to complete the course." I don't really understand the difference between lowering attrition and making students more successful to complete the course. Both of those sound like you're tailoring the standards not to the mission, but to the graduation rates that you have at the course.

General NELLER. I'm not going to speak for General Bohn, but my view is, when I was approached with this, says, "This is what we can equate to training in our requirements manual for the infantry. These are the three that we should evaluate as go or no-go for graduating from the course." That's what we did.

Senator COTTON. Thank you.

My time is expired.

Senator INHOFE. Thank you, Senator Cotton.

Senator Nelson.

Senator NELSON. Admiral, long ago we learned a lesson from having too many assets in one place at Pearl Harbor. Today we have six aircraft carriers at Norfolk. But, it's not only an aircraft carrier problem. I understand we face a dispersal problem with other ships, as well, including those that make up the amphibious readiness groups.

I know you'll be releasing a strategic laydown and dispersal plan shortly, so I don't want us to get ahead of that, but what are some of the viable options, as far as home ports, for helping to achieve dispersal objectives when it comes to these ships? And knowing that different infrastructure exist at these ports, once you decide to move ships or to place new ships at a port, typically how long does it take to get that specific base ready for having those ships? How critical is it that we begin the planning and design now in order to support these ships that will be moving in the future?

Admiral RICHARDSON. Senator, I thank you for that question. And we've had a number of conversations about this critical strategic issue of laydown and dispersal, particularly on the East Coast. As you mentioned, we're in the final phases of putting together the strategic laydown and dispersal plan. I look forward to coming to you with that final plan.

As part of the considerations in that plan, there is not only the warfighting strategic dispersal that we have to take into consideration, but also the infrastructure in each of those ports. And so, as we consider Norfolk, Little Creek, Mayport, primarily for our surface ships on the East Coast, our submarines there at Norfolk, King's Bay, and Groton, there is the geographic dispersal from a force-protection standpoint, there is the infrastructure of the port itself to be able to accommodate those ships pierside, particularly under heavy-weather conditions if we're talking a port like Mayport, and then there's the maintenance capacity of those ports so that we can keep them repaired and ready to go to sea.

So, in terms of how long it takes to get a port ready, it really sort of depends on where you're starting and what your goal is. But, 3 to 4 years is not an unreasonable number to start to consider these sorts of plans. As you know, the sooner you get started, the more prepared you are.

Senator NELSON. Okay, thank you, Admiral.

Mr. Secretary, it's good to see you. Thank you for the good job that you're doing.

We have the E–2D Hawkeye. It's manufactured in Florida. Knowing that these planes are vital to the Navy mission in combatant commander requirements, we have an opportunity to block buy these planes at a significant savings to the taxpayer. Have you got any comments that we might have been able to see cost savings when negotiating the next multiyear contract? If so, is it in line with industry standards?

Secretary SPENCER. Senator, it's underway and there is more to come. I think is the best explanation that I can give you. We will share with you what we see as we come to closure with the options available to us. But, you're exactly right, that is one path that we can extract savings and efficiencies. As you've heard, we've said it since my feet were on the ground—we're looking to industry to be our partner now, not simply just a transaction orientation. And, in that light, we hope that we can work together to get the best goal; i.e., What do we both need to succeed? That's the conversations that are having now.

Senator NELSON. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator.

Senator Perdue.

Senator PERDUE. Thank you, Mr. Chair.

Thank you guys for being here today, and for your service. No kidding.

Secretary Spencer and Admiral Richardson, Admiral Harris, in repeated visits to the Hill in the last couple of years, has previously stated that approximately 230 of the 400 foreign national submarines worldwide are located in the Indo-Pacific region. And, of those, 160 belong to China, Russia, and North Korea. We've got about 74 submarine capabilities around the world. Without asking how many are in the Pacific, the question I have is, As the NDS focuses more pressure on naval marine capabilities, particularly with regard to the near competitors of Russia and China, how does this bode—what—how does it—what does this—how does this impact the shortfall in undersea capability? Talk to us a little bit about unmanned capabilities, in terms of development. I know Admiral Moran has talked to us a good about it. In this setting, can you talk to us about how you're going to mitigate the potential attack submarine shortfalls in the 2020s?

Admiral RICHARDSON. Sir, I'll tell you. We're looking at this from a very integrated approach. And I'll just speak to the U.S. Navy approach, and the Secretary will speak to his efforts with our allies.

Maintaining our superiority in the undersea domain is going to rely on a integrated approach between manned and unmanned technologies. And so, we're working very closely with the undersea submarine industrial base to make sure that, as we move through

the *Columbia*-class program, as we move through enhancing the *Virginia*-class submarine with the *Virginia* payload module and look forward to all those manned types of approaches, that we are doing so in a way that really maximizes the capacity of the industrial base to deliver those submarines on time.

Senator PERDUE. Do we have the supply chain now? If not, how long will it take to develop that supply chain to meet those needs?

Admiral RICHARDSON. The supply chain, particularly the second- and third-tier vendors, have really—has really been leaned out over the past years. And so, the signal that has started in 2018 and hopefully will continue in 2019—they had the 18 months of uninterrupted, stable, and sufficient funding—will be a tremendous bolster of confidence to those second- and third-tier suppliers, will allow them to make some investments to bring that system back to health.

But, even if we do all that, sir, I don't think that an only-manned approach is going to get us where we need to go. That's why I've made a family of unmanned undersea vehicles an acquisition priority. It's in the accelerated acquisition program for the Navy. And so, you can start to see this combination of manned enhanced by unmanned vehicles as being the key to maintaining our superiority undersea.

Senator PERDUE. Mr. Secretary?

Secretary SPENCER. Senator, coupled with that, the second pillar of the National Defense Strategy is a robust constellation of partners and allies.

Senator PERDUE. Sure.

Secretary SPENCER. I will tell you that we are spending a good amount of time out there hugging our allies and partners, to include Australia, Japan, Singapore, Korea, and, more recently coming into the fold, India and even Vietnam. And it's going to be a collective effort that's going to make up any gapping that we have there. They are committed. They are buying the right equipment. They are working with us. I invite everyone on the Senate Armed Service Committee—this is a formal invitation to join us in RIMPAC, where you're going to see a complete coordination of faces and partners.

Senator PERDUE. Will China be a part of that this year?

Secretary SPENCER. China has been invited.

Senator PERDUE. Will they be a part of it?

Secretary SPENCER. I don't know what the response was from the invitation, but they have been invited——

Senator PERDUE. Thank you, sir.

Mr. SPENCER.—to select series.

Senator PERDUE. With my time remaining, I'd like all three of you, or certainly Admiral Richardson and General Neller, to comment on the risk we have with regard to space and cyber domains. These are the two new domains that you guys are having to deal with. Particularly with our precision munitions and our communication capability, on the ground and on the sea, what are we doing right now to mitigate the risk that we now are realizing we have in the space domain and in the cyber domain?

General NELLER. Well, Senator, I think you characterize it correctly. We recognize that we've built a way of war which is not totally, but significantly, dependent upon——

Senator PERDUE. Yes, sir.

General NELLER.—on space and the network. And so, we realize that we have to keep our network up, it has to be resilient, and we have to be able to operate with a minimum of bandwidth, and we've got to make, in the requirements for anything else that we buy, that it has more than one way to find its way to its destination.

Senator PERDUE. Yes, sir.

General NELLER. So, the cyber piece is first defend, protect yours and deny the adversary theirs, and then make sure that the munitions you have are going to operate, even if that network is degraded or the constellation is degraded. So, space is a place where we're going to operate in a different kind of way. If General Hyten were here, he would tell you that there is maneuver in space and there is shaping operations in space, and, other than that, we'd probably get into a classified domain beyond my capacity to explain it to you.

Senator PERDUE. Yes, sir.

General NELLER. But, clearly it's something that's on everybody's mind. It's—the number—and, for us, in the Marine Corps, and with the Navy, through the Secretary's leadership, we realize we've got to have integrated network, we've got to have a naval grid so that all ships can communicate, and airplanes can communicate with the ships and ground forces. And so, that's a big effort, and that's part of the modernization, and that's partly what the appropriation that we have is going to help us figure out a way to do.

Admiral RICHARDSON. Sir, I'll just pile on quickly, because I know we're getting out of time.

Senator PERDUE. Yes, sir.

Admiral RICHARDSON. But, I will tell you that, in addition, the command and control of the entire battlespace, including those two new domains that you mentioned, has got to be something that is completely integrated, as well. And so, we've—are starting to wargame more and more robustly how you would command and control those two domains, really down to nanosecond timing to be effective there.

Finally, just to address your comments on GPS, we're accelerating our efforts to get precision navigation and timing techniques that will allow us to continue to operate in the absence of GPS, if that's the way it goes.

Senator PERDUE. Yes, sir.

Thank you.

Senator INHOFE. Thank you, Senator Perdue.

Senator Shaheen.

Senator SHAHEEN. Thank you, Mr. Chairman.

Thank you all for your service and for being here today.

Secretary Spencer, I was really pleased to hear your anecdote about the contract with Wahweh, and how the Navy handled that. I think, just as we saw with Kaspersky Software, the threat from our adversaries is not just external, based on weapon systems and firepower, but it's also internal, based on information—

disinformation campaigns and cyber. According to a February 2018 article in Breaking Defense, the commander of Naval Information Forces, Rear Admiral Matthew Kohler, said that—well, he actually likened the Navy's IT [Information Technology] workforce situation to that of recent ship collisions in the Pacific. He's concerned about the assumption that if IT professionals are operating all the time, they're getting all the practice they need, and they don't need training. So, can you talk about the extent to which the Navy is looking at training that our IT professionals need and what you might need also in the way of equipment?

Secretary SPENCER. Yes, Senator. We've brought this up—not only IT, but collectively in the cyber community. We look at the work that N–1 has done with Admiral Burke on our future force needs. We are tailoring. We are looking at new ways to get at this. We're going to be coming in front of you all possibly to nibble on the sides of DOPMA [Defense Officer Personnel Management]. As an example, the ability to have people come in and out of the service to remain current, this would specifically pertain to our cyber community, and probably also to parts of our IT community. We have to start thinking outside the box in order to accommodate, access, and retain the talent that we need in these areas.

Turn it over to the CNO, if he had any further——

Admiral RICHARDSON. Thank you, Mr. Secretary.

I'll just pile onto that, ma'am, is—I would highly encourage you to take a quick visit down to Suffolk, Virginia, where we—Admiral Kohler has his command, and you get to see the stunning talent that the Secretary alluded to in our sailors and civilians that are actually prosecuting this fight in the cyber domain. Right now, our recruiting and our retention is good there, which is a tribute to the values and ideals and dedication of that team. But, I do take the point that you cannot assume that, just because you're doing operations, that you're doing the sets and reps that are necessary for full readiness. And so, Admiral Kohler and I, Admiral Tighe and the rest of the information warfare community are looking at that very closely.

Senator SHAHEEN. Well, thank you. I'm pleased to hear that, and I'm sure this committee is interested in supporting those efforts.

There is a report to Congress on extending the service life of the *Los Angeles*-class sub. I support this effort. I think it is important to span the gap between 2021 and 2031, where we will need those submarines to address the threat that we face. I was pleased to see that the report proposes that most of the work be done at the Portsmouth Naval Shipyard, which obviously I'm very interested in, and that it includes the need for investments in infrastructure in order to support that effort. But, it doesn't really speak to the workforce that's going to be needed. Given what we're seeing already at the shipyard, in terms of the challenge of getting the STEM [Science, Technology, Math, and Engineering] workers that we need for those jobs, can you speak to what your thinking is about how we make sure the workforce is there to do this work on the *Los Angeles*-class subs?

Admiral RICHARDSON. Yes, ma'am, thank you. Just a— kudos to the team at Portsmouth Naval Shipyard. They really do terrific work on our nuclear powered submarine force.

Senator SHAHEEN. Absolutely. I'm going to be meeting with some of the superintendents later. I will share that with them.

Admiral RICHARDSON. Thank you, ma'am.

But, I'll tell you that the workforce is, I think, the central challenge when we talk about expanding capabilities, whether it's in acquisition or in maintenance, repair. Finding those talented people is the principal challenge. We are on a plan to increase our shipyard workforce up north of 36,000 nationwide. We think that that will be the proper number to get our arms around the workload, which includes the potential life extension of *Los Angeles*-class submarines. One is in the budget, and we're looking at the engineering basis for more.

We address this through, one, you know, heavy-duty recruiting, but also successful intern programs and all of those—the word escapes me right now, but the schools that really go out to the community and bring these people in and give them the essential training that they need to be effective shipyard workers.

Secretary SPENCER. I want to just put a footnote on there, Senator, which is addressing workforce. One of the beauties of this job is to go incognito and wander around the assets. And, two weekends ago, with my bluejeans on and a hat, I wandered into the STEM festival, which was going on at the Walter Washington Convention Conference. And, first of all, I was wildly invigorated seeing the number of kids that were there. But, on the first floor, front and center, is Lincoln Welding, with its welding exhibition. And had to them—and I went up to them, and I said, "Bravo. This is exactly what we need to get people interested in science, technology, engineering, mathematics, and manufacturing." So, it's happening.

Senator SHAHEEN. Absolutely. I applaud the Navy's work to support those kinds of programs, like the CPARS [Contractor Performance Assessment Reports System] challenge that Admiral Richardson and I were talking about.

Secretary SPENCER. Yes, ma'am.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman.

Admiral RICHARDSON. These apprentice programs is the thing that——

Senator SHAHEEN. Yes, absolutely. That's critical if we're going to get the workforce we need for the future.

Senator INHOFE. Thank you, Senator Shaheen.

Senator Wicker.

Senator WICKER. Thank you.

Secretary Spencer, how often do you go around incognito?

[Laughter.]

Senator WICKER. Do you feel safe?

[Laughter.]

Secretary SPENCER. I do. I do, Senator.

Admiral RICHARDSON. I don't when he does that.

[Laughter.]

Senator WICKER. Okay.

Well, let me ask both of you. The Navy is at 324,000 Active Duty sailors. I'm told that is the lowest in almost a decade. The Navy reportedly is 11,000 sailors short of the required manpower levels

in the near term, and 50,000 short of the estimated force needed to crew a 355-ship Navy, which is the requirement that was set by the admirals and generals. Senator McCain and I have introduced the Surface Warfare Enhancement Act. And, Secretary Spencer, you and I have discussed this previously. The legislation, among other things, includes provisions to help the Navy retain critical personnel by offering some relief from DOPMA and Goldwater-Nichols. What steps do each of you recommend that we take in Congress to help the Navy attract and retain the personnel required to operate a 355-ship fleet?

I might mention, thank you for the decision to extent the service lives of destroyers. Of course, this will give us 355 ships much earlier, but we must also accelerate the end strength of the force. So, if you would discuss that. I guess we'll begin with you, Mr. Secretary.

Secretary SPENCER. Thank you, Senator.

I think starting with 355 and working down, you know, we will get there. We've told you we'll get there, and I think, when—in October, when we came to a coalescion on this, we said there were a couple of plans underway. You see the extension of the DDG–51s for 45 years, *Los Angeles*-class. We also have some other plans we're working on. So, stand by. We also realize that we have to drive the anvil and build new, also, and we're going to work every way we can to find the resources necessary to do that.

When, in fact, we do sign up for new platforms—i.e., ships—just putting my business hat on, that's just one tube, that's just one column of the resources needed. We also need the maintenance column, and we also need to have on the graph the personnel column, so—to really have the full lifecycle cost of the weapons platform, itself. If you see——

Senator WICKER. But, let's talk about the sailors——

Secretary SPENCER. Yeah.

Senator WICKER.—aspect.

Secretary SPENCER. As we see—I'm working into that—as we see 7500 that we're asking for, going forward, we are going to have to work in—at tooth and nail, because we're fishing in the same pool as the Air Force and the Army. We believe we have a very compelling story. We believe we have the ability right now to attract those necessary. We're not seeing a tremendous stress yet, although we are going to prepare for it. "Forged from the sea" is the message going out there. Right now, we believe that the 7500 we're looking for is within reach and not threatened by any targets to date.

Admiral RICHARDSON. Senator, I'll just pile onto what the Secretary said.

As you know, the budget does request 7,500 new sailors this year, which is really more—you know, more than—an increase in the end strength, which really is regulated by about the maximum capacity that we can bring them through the training program and get them to be useful sailors.

With respect to DOPMA reforms, I can't thank this committee enough for their support in our proposals to allow— I would say, sort of, three things would provide some tremendous flexibility. One is sort of merit reordering so that we can get our talent to go to the top, and accelerate that talent. One is the opportunity to

maybe postpone your board for promotions so that you can make sure that you've got all of the wickets met before you go before the promotion board. Then, finally, the opportunity, as we've hinted at earlier, to bring in talent horizontally, particularly in areas like cyber and those niche skills that would allow us to inject, you know, those highly skilled people at the appropriate level.

Again, you know, the committee's been very supportive in these efforts, and I—you know, I thank you for that.

Senator WICKER. Thank you.

General Neller, the—let's talk about lethality and the tag line, "If it floats, it fights." Do you have any thoughts for us on increasing the lethality of our amphibious ships?

General NELLER. Well, Senator, I think every surface combatant is exactly that, it's a warship, and there's capabilities that we could leverage on—LPD hull form, for example.

Senator WICKER. What if we put the vertical launch system on the Flight II LPDs?

General NELLER. I think that's a great idea.

Senator WICKER. Do you agree, Secretary Spencer?

Secretary SPENCER. Most definitely.

Senator WICKER. All right.

Thank you very much, gentlemen.

Senator INHOFE. Thank you, Senator Wicker.

Senator King.

Senator KING. Thank you, Mr. Chairman.

I just want to be clear, for the record, that the Portsmouth Naval Shipyard is in Kittery, Maine. We just want to clarify that.

[Laughter.]

Senator KING. Senator Shaheen is—have some—she and I sued each other over that, 20 years ago.

[Laughter.]

Senator KING. United States Supreme Court solved that question.

[Laughter.]

Senator INHOFE. How many years ago?

Senator KING. It was about 25.

Senator INHOFE. Who won?

Senator KING. The answer is contained in the fact that it's Kittery, Maine.

[Laughter.]

Senator KING. First, I want to compliment our naval personnel for having the foresight to hire the pilot of the Southeast Airlines who did such a marvelous job landing that plane, who, by the way, was rejected by another armed service, which we won't mention in this hearing, at the time, who did not take female pilots. The Navy did, and the training and work that she performed in the Navy saved a lot of lives this week. So, I want to acknowledge that.

Admiral, can you give us a quick update, given the time constraints, on the collision review, what happened, root causes, and what's—what we're doing to prevent that kind of tragedy in the future?

Admiral RICHARDSON. Yes, sir. Thank you, Senator.

I'll tell you, I'd just echo the impressive performance of the pilot, and representative of the professionals in—naval aviators, men and women, in all parts of our naval aviation force right now.

With respect to the collisions, you know, we are moving out briskly on the plan that addresses, to our very best ability, the root causes of those collisions. Those root causes being, you know, the fact that, as we discussed earlier, you must spend some time on just—first of all, completing the maintenance completely, and then, once out of maintenance, doing the training required to get those skillsets up to where they need to—to do the combat missions and just the basic operations, and then certifying that that training has met all of the requirements before you go on out and do that. And so, we've taken a number of steps, from examining the career path of surface warfare officers to make sure that they are getting the requisite time at sea as they execute their career and go on up to becoming competent and confident commanding officers. Along that career path is not only at-sea experience, but also education and certification. We've adjusted the command-and-control structure to make sure that we've got firm advocates for training and certification in each of our home ports.

Senator KING. Let me interrupt, because of the time constraints.

Admiral RICHARDSON. Yes, sir.

Senator KING. Could you supply, for the record, a—an outline of where you are?

Admiral RICHARDSON. I'd be happy to, yes, Senator.

Senator KING. Next steps—root causes, next steps.

Admiral RICHARDSON. Yes, sir.

[The information referred to follows:]

Admiral RICHARDSON. Readiness reform remains a critical Navy priority in the wake of the tragic USS *Fitzgerald* and USS *John S. McCain* collisions. Following the accidents at sea, the Navy commissioned the Comprehensive Review (CR) and Strategic Readiness Review (SRR) to identify causal factors and recommend corrective actions. In January 2018, the Navy established the Readiness Reform Oversight Council (RROC) to oversee implementation of CR/SRR recommendations as well as related recommendations from other sources (e.g., Government Accountability Office, Navy Inspector General). Chaired by the Vice Chief of Naval Operations and Undersecretary of the Navy, the RROC is currently addressing 111 recommendations. To date, 35 of 111 recommendations have been fully implemented with over 70 percent expected to be implemented by the end of September 2018. Along with aggressively implementing the remaining recommendations, the Navy is simultaneously developing the tools and processes to ensure that implemented recommendations are effective. $38.3 million was appropriated for readiness reform in fiscal year 2018, $79.1 million requested for Presidents Budget 2019, and $601 million programmed for Surface Warfare readiness reform through the fiscal year 2019–2023 FYDP. The RROC also seeks to expedite an additional $66 million of unfunded priorities during the Mid-Year Review. The status of a select few key actions taken to improve readiness across the fleet are described below. 7th Fleet Operations—7th Fleet has adopted new scheduling and force generation processes that identify mismatches in force employment and force generation while protecting training/certification periods for ships. Naval Surface Group Western Pacific (NSGWP) has been established to oversee maintenance and training for surface ships assigned to Forward Deployed Naval Forces Japan. Command and Control—The Navy is undertaking a clean sheet review of the Administrative Chain of Command to optimize readiness, clarify C2 at all echelons and provide clear responsibility and accountability for force generation. As part of this initiative, 2nd fleet has been re-established to focus on warfighting and certification of deploying forces. Mitigating Risk of "Can-Do Culture"—Multiple steps have been taken to properly manage supply and demand of operational forces to prevent overstressing individuals and units and avoid putting ship COs in a position to commit forces that do not meet full readiness standards. In addition to the above changes to C2 and oper-

ational scheduling practices, force-wide circadian rhythm implementation is underway to allow COs to better manage crew fatigue and properly mitigate operational risk. Manning—Navy manning policies now prioritize Japan based ships. Six of 11 Japan based Cruisers and Destroyers meet their manning targets with 10/11 expected by June 2018. New incentive policies have been enacted place to encourage sailors to select and extend in Japan-based billets. Manning statuses are reviewed monthly by Fleet Commanders to identify shortfalls. Surface Warfare Officer (SWO) Career Path—The SWO career path is being restructured to emphasize mastery of seamanship and navigation skills. First and second tour lengths for Junior officers have already been adjusted to maximize at sea experience while changes to Senior Officer tour lengths are under review. Proficiency assessment and tracking mechanisms are also under consideration by senior Navy leadership. SWO Training—Short and long term improvements are underway to expand training for bridge watch standers, emphasize higher-stress scenarios representative of high density shipping and extremis situations, and better utilize integrated simulator systems and yard patrol craft. Surface Force Navigation Equipment-Plans are ongoing to accelerate replacement of surface search RADAR, modernize bridge equipment and transition to next generation electronic navigation systems.

Admiral RICHARDSON. As you know, we've committed to come over and briefing both the staff and the members quarterly on our execution of that plan. The Vice Chief of Naval Operations and the Under Secretary have already provided the first of those updates. We look forward to continuing those.

Senator KING. Thank you.

Mr. Secretary, the Navy and the Marine Corps are undergoing their first full audit. Can you give me a quick update on where that process is and any lessons learned, thus far?

Secretary SPENCER. Yes, Senator. You'll find out here, if not today, that we, at the Navy side, will have a qualification announced by the auditors. I want to manage everyone's expectations as to what that means. As we said originally, the audit process is not only creating a tool for us to manage by, but it's also an educational process. As the auditors get in there and start drilling down, we are already started learning.

The qualification comes from the fact that—the number of transactions the Navy has, the dissimilar systems that we're using to actually collate this information. And it's—I believe this is actually a benefit, because what the auditors must stop doing is sample testing and actually get down to rolling up the sleeves and doing individual education on systems to understand how the buildup comes.

Senator KING. When can I tell the people of Maine we're going to have a final audit?

Secretary SPENCER. A clean audit?

Senator KING. Yes, sir.

Secretary SPENCER. Maybe 5 to 7 years.

Senator KING. But, you're in the process now of——

Secretary SPENCER. We are clearly in the hunt.

Senator KING. Thank you.

I spent some time earlier this week with the joint force in Florida that does drug interdiction. This is just a request. We are only able to interdict 25 percent of drug shipments by sea that we know of. In other words, we have intelligence to tell us there are 100 units out there; we can only stop 25 of them. The problem is assets, particularly in the Coast Guard. My request is simply that you think creatively, cooperatively with the Coast Guard to see if there's a way to improve that miserable record.

Secretary SPENCER. Senator, timely observation requests, the CNO and I have been working on this now for a couple of months to see what we can put down there as usable resources, because we're painfully aware of the situation. It's not a quick and easy fix, in that we—you have the difference between our titled responsibilities, and we will have to cooperate, and gladly cooperate, with not only the Coast Guard, but with the Department of Homeland Security.

Senator KING. Well, I understand the limitations, but in the—since we've been talking for the last hour, four people in America have died from drug overdoses, and we're under attack. This is a place where we should be able to shore up our defenses. So, thank you for taking that initiative, and I'll look forward to updates.

Secretary SPENCER. Yes, sir.

Senator KING. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator King.

Senator Ernst.

Senator ERNST. Thank you, Mr. Chair.

Secretary Spencer, Senator King brought up some great questions about incidents and collisions at sea. I'm going to move that up a little bit. Let's go to the air. I've been closely following the physiological episodes, those incidents that have plagued the Air Force and the Navy aviation platforms. Just yesterday, it was reported that the T–6 Texan II trainer aircraft pilots have experienced 12 PEs [physiological episodes] since the 1st of March. I know that you're working with the Air Force to solve the problem, but, going back to Senator King's point earlier, is—what is that root cause? We still don't have a root cause for those physiological episodes. And so, can you please update our committee on the efforts to identify and remedy the Navy's physiological episodes?

Secretary SPENCER. Senator, I'd be more than happy to, for the record, put our latest update, which has—it's quite voluminous, as far as efforts. I will provide a topical overview, though, which is fascinating when you come to a numbers analysis.

[The information referred to follows:]

Secretary SPENCER. Please forgive me in advance for the length of this response as I outline our many efforts to identify and correct the root causes of Physiological Events (PEs) in our high performance aircraft, however our efforts are extensive. Tremendous combined efforts are being put forth by Naval Air Systems Command (NAVAIR), Commander Naval Air Forces (CNAF) and Bureau of Naval Medicine (BUMED) to identify, correct and address the causes of PEs. Corrections to the machine are being identified by our engineers and vary by aircraft. However, we remain challenged by differences in human physiology to determine what variables are causing our aviators to be negatively impacted. We have found individual aviators react differently to environmental variations thereby adding to the complexity of identifying contributing problems. There is not a single cause for PEs but rather multiple contributing factors that are negatively impacting our aviators. We are making progress in our efforts which include training, material requirements, emergency procedures, maintenance procedures, depot/industry repair acceptance procedures, direct engagement with Fleet and external reporting of corrective actions identified by our Root Cause Corrective Actions (RCCA) team. To date we have made tremendous progress with our T–45s, are reducing the severity and rate in our F/A–18 series, and are working in concert with the USAF to address T–6 PE events though we are not experiencing the same rate or severity of PE events on our T–6s. The next few paragraphs will highlight lines of effort and root causes identified to date. We have turned the corner on PEs in the T–45 training aircraft. Due to the simplicity of the system and through the installation of the CRU–123 solid-state oxygen monitor, we identified marginal oxygen pressure to the pilot's

mask in some of the aircraft that could contribute to a PE in specific regimes of flight. We took immediate action to increase the oxygen flow through the On-Board Oxygen Generating System (OBOGS) by increasing low airflow from the engine and reducing flow constrictions in the system. Additionally, we added warnings to the pilot to alert them of low flow in the system so they can take immediate steps to ensure their safety. We were able to mitigate the problem and have observed a marked reduction in the T–45 PE rate. Development of longer term corrections to the system are in progress which include items such as an automatic backup oxygen system (ABOS) to improve the flow. Since we have returned to flight there have been only 2 PEs tied to OBOGS malfunction and both were indicated in the cockpit, which enabled the pilots to safely land. We also have removed any concerns regarding toxins in the system through the analysis of over 20,000 OBOGS air samples with no contamination found. We have a full understanding of the T–45 breathing system challenges and we have implemented data driven corrections to the aircraft. While F/A–18 is showing improvements in the PE rate and severity, the complexity of the system continues to challenge our engineering force. The aircraft has two contributing factors that we have identified as detrimental to our pilots; failure modes of the environmental control system (ECS) resulting in cockpit pressurization anomalies (loss of pressure, fluctuating pressure and overpressure) and breathing gas anomalies resulting in respiration impacts. We are pursuing root causes in both the aircraft and the pilot. For the aircraft, we are working closely with industry partners to accelerate their progress and make corrective modifications to improve aircraft performance. Our Boeing partners, with NAVAIR, are addressing the F/A–18 series environmental control system (ECS) software to "smooth out" the cabin pressurization flow, identifying valve deficiencies/failures and compromised muscle pressure ducting that contribute to pressure instability. We are developing and fielding performance and reliability improvements to the primary and secondary bleed air regulators. For our oxygen system, we are accepting proposals for a next generation OBOGS concentrator which will not only comply with the MILSTD 3050 released in 2015 but will also provide data logging of oxygen and pressure provided to the pilot's mask. NAVAIR and Boeing have accepted a new digital cabin pressurization system to replace the current F/A–18's analog cockpit-pressure altimeter—a needle that moves up and down on the instrument to reflect cabin pressurization. The Cockpit Pressure and Oxygen Monitoring System (CPOMS) will constantly display cabin pressure to the aircrew and alert them visually and aurally—through their headset—if there is a change in air flow. CPOMS also will record cabin pressurization data throughout the mission for post-flight review. CPOMS phase one will allow data logging as well as indications and warnings of pressure anomalies in the cockpit while phase two will automatically actuate emergency oxygen for the aircrew. We realize that data recording is critical to identifying the root causes of PEs and we are leaning forward to find better ways to obtain the data and warn the aircrew. Recognizing that we may have future problems with the Navy T–6s, we are assisting the Air Force Safety Investigation Board (SIB) with both a member from the PEAT and an engineer from NAVAIR. Our close coordination with the U.S. Air Force has already enabled us to develop joint solutions and achieve a better understanding of the cockpit environment and our oxygen systems. We are also working closely with the Unexplained Physiologic Events (UPE) Integration Team that serves as Air Force's focal point for identifying solutions to optimize human performance in tactical aviation and eliminate or minimize the impact of PEs. To address the human side of PEs, data and research are critical. While we have been challenged to identify and field sensors for the pilot that function accurately in the challenging environment of our fighter aircraft, we do have a few systems showing promise and are currently in testing. Cobham's VigilOX pilot breathing sensor system has been tested on our F–18 and T–45 aircraft. VigilOX is a pilot-worn sensing system that captures real-time physiological, breathing gas and cockpit environmental data during flight, and helps identify conditions around unexplained physiological episodes. We are reviewing the post-flight data, which is correlated to reported hypoxia-like symptoms. This data will form the basis of a predictive algorithm that will ultimately drive oxygen equipment to automatically adjust oxygen dosage as needed to protect the pilot. Cobham's sensor that measures the inhaled gas is functioning but there are issues with their exhalation sensor block. The Inhalation Sensor Block (ISB) is filling in gaps of data at rates that are not measured by a CRU–123 or any other current system we have. We can now see the effects of G-loads and changes in cabin pressures on breathing patterns, O2 concentration, and gas flow. In short, we can accurately measure how much product gas (hopefully with enough O2 concentration) is being used by the aircrew and will no longer need to rely on estimates. These data points will support our medical community in understanding what TACAIR flying does to the human system, and after the ESB is

consistent enough, we will start picking up on what effects too much or too little O2 has on the aircrew. While extremely promising, the Exhalation Sensor Block (ESB) still remains a few iterations away from fielding. The team also is looking at how the flight gear fit might restrict aircrew breathing, such as an overly tight harness or a leaky mask. A test set has been fielded to test aircrew breathing systems to ensure proper form, fit and function. Utilizing our Navy and USAF laboratories, testing will be done to develop a better understanding of gear function in the centrifuge, impacts of pressure fluctuations on human physiology and to better understand oxygen delivery impacts such as variations in oxygen content. BUMED is actively supporting this research as well as our treatment regimens for aviators impacted by a PE by establishing centers of knowledge and excellence at Navy Portsmouth and Balboa hospitals. Finally, we are conducting cross talks with major academic and medical research agencies to increase the pool of expertise being brought to bear against the physiological aspects of PEs. I hope that this brief update is useful and provides insight into our current efforts to counter PEs in our aircraft. The application of measurement and data remains key to our discovering and resolving the root causes of these events. We are dedicated to addressing PEs in our tactical and training aircraft and this issue remains the number one safety concern for the entire Naval Aviation community. As we move forward to implement numerous technical and operational measures to mitigate the risk to aircrew, we are achieving a notable reduction in the number of PE occurrences. We continue to utilize every available resource, the knowledge of internal and external partners, and our subject matter experts to resolve these issues. Admittedly, this is a complex issue with no single root cause or single solution. However, we are making progress with identifying multiple contributing factors and incorporating the associated mitigating solutions. Thank you for your continued support to help us resolve this challenging problem.

Secretary SPENCER. We are not—the Navy is not witnessing the same failures that the Air Force is witnessing in the same type aircraft. I'm not saying that one's better than the other. We're doing the same type maintenance and analysis, and we're—this is kind of a confounding issue. We are working the root causes. We are replacing parts—OBOGs [Onboard Oxygen Generation Systems]. We are replumbing. We are resoftwaring. When it comes to the F–18, as you know, some of those depressurizations were just due to age of aircraft. But, it still means we have to come to solutions. We are at it. We are tooth and nail, and we are also reaching across to the Air Force to work hand in hand with them.

Senator ERNST. I appreciate the collaboration on that.

Is there a way that Congress can provide additional supports in that effort?

Secretary SPENCER. We will definitely let you know when we——

Senator ERNST. I'm sure you will.

Mr. SPENCER.—find more, yes.

Senator ERNST. I expect it. Okay. Thank you, Mr. Secretary.

General Neller, through my work as chairman of the Emerging Threats and Capabilities Subcommittee, which has jurisdiction over SOCOM, I've really learned a lot about the care and the treatment programs that our special operators have, as well as their families. And one of the programs that I feel that has been very, very helpful in this regard is the Preservation of the Force and Family (POTFF). Senator Heinrich and I recently held a hearing with our SOCOM and—with the SOCOM and its component commanders, and they all agreed that this particular program of POTFF has been very, very successful in getting our warfighters back into the fight.

Would you be able to speak to the value that POTFF provides for MARSOC [Marine Special Operations Command]? Is this a pro-

gram that you think could be expanded to the rest of the Marine Corps?

General NELLER. Well, clearly the Preservation of Force are in the efforts that SOCOM is able to deliver, as far as mental health and fitness to their family, because their smaller numbers is a big deal, and because of the frequency of their appointments, albeit shorter, and the type of actions that they take when they deploy, it's very critical for them to keep those soldiers, sailors, airmen, and marines in the fight.

So, we fully support that. I'm in—I was talking to General Mundy, our MARSOC Commander, about what they're doing, as far as health of the force. Several years ago, the Marine Corps, from our aviation community, used that. We adopted almost—every unit has a—what's called a Force Preservation Council, where they sit down with—the leadership sits down—when a new marine checks in, they go over, they review their record, any stressors in their life. When people have an issue or something happens that would elevate—whether it's a discipline or something like that—then they become reviewed by the Force Preservation Council to see, "Okay, what do we have to do to help this individual marine?" We have the Marine Life Intercept Counselors that go. And we do this—we're still—the mental health capacity of the force is much better than it was 15 years ago, but it's probably never going to be what we want it to be. So, I think that that type of activity has transitioned itself into the Active Duty or the conventional force.

Senator ERNST. Okay.

General NELLER. We work with it, but we're never going to get the results we want, which is everybody's healthy and nobody—everybody's successful as they can be.

Senator ERNST. I think the point is that we try to do the absolute best we can for our warriors. So, if there are best practices that we can take from Preservation of the Force and the Family, we certainly would like to make sure that those are extended into the Marine Corps and then, as well, of course, across the Navy, as well.

Admiral RICHARDSON. Working with Naval Special Warfare, they also have a very vigorous——

Senator ERNST. Yes, they do.

Admiral RICHARDSON.—Preservation of the Force and Family, and ask that exact question, What can we do across the entire Navy to adopt best practices?

Senator ERNST. Absolutely, and if there are ways that we can support it, we certainly want to do that.

Thank you, gentlemen, very much for being here today.

Senator INHOFE. Thank you, Senator Ernst.

Senator Warren.

Senator WARREN. Thank you, Mr. Chairman.

Thank you, to our witnesses, for being here today.

So, the Defense Department spends hundreds of billions of taxpayer dollars every year on goods and services provided by contractors. Federal workplace safety inspectors have found that some companies, including Navy shipbuilding contractors, have endangered their workers, resulting in deaths, extensive burns, and other serious injuries, and they keep right on getting massive government contracts. We have plenty of laws requiring these Federal

contractors to operate more safely, but all the laws on the books won't do any good unless there's serious enforcement.

So, Secretary Spencer, I appreciate your willingness to work with me to ensure that American workers employed by the Navy can work in safe conditions. Can you briefly describe the efforts that you've directed the Navy to undertake to improve contractors' compliance with worker protection laws?

Secretary SPENCER. Thank you, Senator. When I first testified to take this position, I think you and I had this conversation.

Senator WARREN. Yes, we did.

Secretary SPENCER. I promised you that we would take action. What we have done—this really is a whole-of-government solution, and I'm certainly not taking the responsibility off the back of the Navy whatsoever, but OSHA is in here, front and center. They, like many organizations, have their constraints, both fiscally and manpower—does not alleviate the fact the situation is being focused upon. We have spoken to those that we are contracting with that have violations and said, one, we will not tolerate this on our next—if, in fact, there is a breach from normal safety manners to cause accident and/or a detriment to the workers, we have the ability, through funds, to correct behavior.

Senator WARREN. Okay. So, I'm glad you've started with them in a conversation, but I think we're going to have to be systematic about this in order to make sure that they keep everyone safe.

Let me ask you about some examples. To comply with Federal rules, Navy contractors must have a safety officer onsite to identify dangerous conditions and enforce occupational safety standards. But, the person could be anyone, from a trained and certified professional to the most junior person hanging out at the site. So, when the Navy signs a contract, the contracting officer can designate a list of key personnel. These are specific skilled or technical individuals who are identified as being critical to the success of the work.

Secretary Spencer, for contracts that meet a threshold of cost or complexity, do you think that the Navy should consider designating the safety officer as key personnel?

Secretary SPENCER. Yes.

Senator WARREN. Good. I like that. And are—the contractors need to know that the Navy expects them to protect their workers if they're going to get taxpayer dollars. Last year, the NDAA required the Government Accountability Office to study DOD's procedures for evaluating workplace safety records for the contractors. But, we don't have to wait for a GAO report. We can start now. I appreciate your help on this.

Secretary SPENCER. Most definitely.

Senator WARREN. Good. So, let me ask about another area.

The Trump administration recently released National Defense Strategy says that, quote, "Long-term strategic competitions with China and Russia are the principal priorities for the Department of Defense." The strategy stresses the need to invest in advanced capabilities for a high-end fight. The Navy has a number of ambitious technological goals in the coming years, from unmanned autonomous systems to electronic warfare to nanotechnology. Today, a lot of this cutting-edge technology is not developed within the

Pentagon, it comes from the commercial sector or laboratories at our colleges and universities.

So, Secretary Spencer, how does the Navy intend to capitalize on commercial and academic developments in advanced technology? Can you just say a brief word about what steps you're taking to make sure that the Navy is closely tied to outside innovators?

Secretary SPENCER. Senator, it's a—it warms my heart to answer this question, because we do have a tall task in front of us. One of the things we're doing right now, just to start at the top, is, we are binning our science and technology investments to align with the National Defense Strategy, the ten buckets that Mike Griffin is helping us identify and bin. It is imperative that we do not only our work internally within the Office of Naval Research, but it is imperative that we reach out into the—our private-sector community. As you know up in Massachusetts, between Lincoln Labs and other efforts we have up there, Woods Hole, we have some amazing research going on outside the organization.

One of the things that I have taken on at the turn of the year was a crown jewel, Senators, that we have in the Navy, which is the Naval Postgraduate School. It is a research-oriented educational institutional. We are now supercharging it to put it into its next orbit. We had conversations with the likes of Eric Schmidt and some others from the Innovation Board and said, "We continue to try to have a relationship with you and drive up and say, What can we buy? What we can we do together?" The thesis that I had was, what better way to create a relationship than to research—basic, relevant research, where we can get two organizations working together on a solution? If, in fact, they commercialize that solution, we'll take a licensing agreement and provide some value to us and value to them, and then we can take that intellectual property and apply it within the DOD. The Naval Postgraduate School will be the center of excellence for this for, not only the Navy and the DOD, but, we hope, all of government.

Senator WARREN. Good. I'm very glad to hear this, Secretary Spencer. You know, the Navy needs to stay closely integrated with our innovators, whether they're in government or out of government. I'm glad to see you take this approach.

Secretary SPENCER. Actually, the conversation I had just last week, Senator, was with Bob Millard at MIT, who——

Senator WARREN. Yeah.

Mr. SPENCER.—welcomes this and looks forward to doing what he can do with the Naval Postgraduate School.

Senator WARREN. Good. Well, let us know how we can help.

Thank you.

Senator INHOFE. Thank you, Senator Warren.

Senator Graham.

Senator GRAHAM. Thank you.

Thank you all for your service.

That was a good discussion about the high-end fight. I want to get down to the trenches on how we protect this Nation from radical Islam.

To the American people, you may be tired of fighting these people, but they're not tired of fighting you. You can build a wall on the southern border, but that's not going to protect you from Mid-

East threats. If some of us are not over there working with our partners, they're going to come here again.

So, that's my general theme. If you want to be safe against radical Islam, you need to be in their backyard so they're not in our backyard. Does that make sense to the Marine Corps?

General NELLER. We don't want to play any home games, Senator.

Senator GRAHAM. Great answer.

What about the Navy? Just say, "I agree with the Marines."

Admiral RICHARDSON. I agree with the Marines, sir.

[Laughter.]

Senator GRAHAM. Never thought I'd hear the Navy say that.

[Laughter.]

General NELLER. I think that——

Senator GRAHAM. Okay. So, this is a——

General NELLER.—goes without saying——

Senator GRAHAM.—breakthrough moment.

General NELLER.—doesn't it?

Admiral RICHARDSON. There's no daylight between us. No daylight between us.

Senator GRAHAM. He objects.

So, let's talk about what that means. Do you support a residual force in Iraq to make sure ISIS [Islamic State in Iraq and Syria] never comes back if the Iraqis would agree to that force?

General?

General NELLER. If the Iraqis were to ask us to stay, it would be my opinion that that would be a good decision for us.

Senator GRAHAM. Thank you.

Syria. We have 2200 people in eastern Syria, working with the Syrian Democratic Forces to make sure ISIS is destroyed. Is that correct, General?

General NELLER. The mission of that force is to defeat ISIS.

Senator GRAHAM. Right. About 250 marines. Is that correct?

General NELLER. I'd rather not get in the exact number of marines.

Senator GRAHAM. That's all right. Some marines.

General NELLER. There are some marines there, yes, sir.

Senator GRAHAM. Okay. So, here's my question. To hold the territory, there has to be a holding force, or they'll come back.

General NELLER. If there's a vacuum, then they will move into it, yes.

Senator GRAHAM. I like partners helping us hold. Do you believe it would be smart for America to be part of that holding force?

General NELLER. In order to get to some sort of a political settlement at Geneva or elsewhere, there—we have to have stability, and if the decision were made that our partners were to come in there, I think our present—we cannot create a vacuum, because it'll be filled by somebody that we don't want.

Senator GRAHAM. Right.

General NELLER. And so, I think that that would be part of the negotiation as to who would be in there. But, I agree with you, there has to be stability. Someone's got to be there.

Senator GRAHAM. Right. So, as to that "someone," would you agree that we have capabilities no army in the region has, and that

we add some value that probably can't be replaced by somebody else?

General NELLER. I would agree with that.

Senator GRAHAM. Okay.

Secretary Spencer, on 12 June 2017, Secretary Mattis said, "No enemy in the field has done more to harm the combat readiness of our military than sequestration." Do you agree with that?

Secretary SPENCER. I do.

Senator GRAHAM. Would you tell every member of this committee, without hesitation, "Don't put me back into sequestration"?

Secretary SPENCER. Don't put me back in sequestration.

Senator GRAHAM. There you go. Y'all are really good.

[Laughter.]

Senator GRAHAM. I think it's the single biggest mistake I've seen since I've been here. That's saying a lot, given Congress's record for the last 20 years.

Navy. Do you agree that a bigger Navy provides more deterrence, Admiral?

Admiral RICHARDSON. I do, sir.

Senator GRAHAM. Have you ever seen a time when we need more deterrence than now?

Admiral RICHARDSON. It's as complex as it's been in my career.

Senator GRAHAM. So, as a matter of fact, the threats have gone up since sequestration, not down. Is that fair to say?

Admiral RICHARDSON. Absolutely.

Senator GRAHAM. So, as we cut our force, the threats did not reduce proportionally, did they?

Admiral RICHARDSON. The assumptions of the security environment didn't pertain. It got more complex, not less.

Senator GRAHAM. So, as we were trying to deal with the chemical weapons attack in Syria, I think a more than a handful of ships were sent to the region to provide that capability and deterrence. Is that correct?

Admiral RICHARDSON. Yes, sir.

Senator GRAHAM. So, a bigger Navy means that you'll have more ships in more places, which will hopefully make some of our adversaries think twice. Is that a fair statement?

Admiral RICHARDSON. That's a very fair statement.

Senator GRAHAM. So, you think 355 ships in 2030 gets the job done?

Admiral RICHARDSON. That's the best estimate we've got right now. In light of the National Defense Strategy, we're going to reassess those numbers in the context of great-power competition and the other threats that face us.

Senator GRAHAM. So, final question. A bigger Navy and a bigger Marine Corps provides more deterrence, more capability. Don't you think it also improves the quality of life for those who serve, because they don't have to be gone so much and they'll have more help?

Admiral RICHARDSON. Absolutely. You get that rotational math going, and you get more time to recover.

Senator GRAHAM. Do you agree with that, General?

General NELLER. We would like to get back to a three-to-one, because it's better for the preparation, the training of the force, and it's better for our families.

Senator GRAHAM. Well, I think the Department of the Navy should be proud of what it's done. And you're the best in the business. And, pound for pound, the Marine Corps is the best on the planet.

So, thank you all.

Senator INHOFE. Thank you, Senator Graham.

Senator Peters.

Senator PETERS. Thank you, Mr. Chairman.

Thank you, gentlemen, for being here today, as always.

I'd like to take an opportunity to follow up on Senator Cotton's questions regarding the LCS. I think I agree with Senator Cotton that those ships need to be out to sea, they need to be deployed. I certainly understand that this may be a reset year, as described by Admiral Richardson, in terms of that deployment. But, I would follow up to say that shipyards don't get a reset year, as you may have with deployment. Today's Navy's acquisition strategy certainly underpins the ability to deploy for many years in the future.

Secretary Spencer, earlier this week, I joined my colleagues, Senators Baldwin, Stabenow, and Johnson, as well as a number of House members from Michigan and Wisconsin, including Speaker Ryan, in sending you a letter on acquisition strategy for the littoral combat ship in fiscal years 2018 and 2019. We're all concerned that, under the current acquisition strategy, the Navy may be missing out on a variant that provides the best value when accounting for differences in capabilities, service life, and total lifestyle cost. Given the transition from LCS to the competition for a new frigate, the decisions that are made today will impact the shipbuilding industrial base for years to come, as well as impact the Navy's ability to grow to the fleet size that it needs in an affordable and timely way. I know the Navy has used an alternating contracting strategy for LCS, awarding two ships to one shipyard and then one ship to the other in alternating years, which the shipyards have optimized for. But, my question to you, Mr. Secretary, as I look forward to your response, certainly, to the letter, but, in the meantime, could you please provide an update on LCS acquisition strategy? Specifically, will the Navy award two Freedom variant LCSs across the fiscal years 2018 and 2019?

Secretary SPENCER. Senator, I've said this before, and I just want to highlight it, one of the jobs, and one of my responsibilities wearing the title 10 hat, is to care and beware and nurture, when necessary, the industrial base. I want to make sure that everybody in here knows that that does not mean it's a welfare situation and that our pocketbook is open just to be open. It is not. We will use the contracts that we have in the most meaningful manner to keep everybody healthy within the bounds that we can. And we are portfolio managers. There is a lot of demands, obviously, on our resources, and we have to manage a full portfolio of acquisitions.

That being said, Senator, we will provide you the letter.

[The information referred to follows:]

THE SECRETARY OF THE NAVY
WASHINGTON DC 20350-1000

April 27, 2018

The Honorable Gary C. Peters
United States Senate
Washington, DC 20510

Dear Senator Peters:

Thank you for your letter of April 16, 2018 expressing support for the Great Lakes shipbuilding industrial base and your concerns with the Navy's acquisition strategy for the procurement of the Littoral Combat Ship (LCS) in Fiscal Years (FY) 2018 and 2019.

The LCS program is comprised of two distinct designs developed by two industry teams led by prime contractors Lockheed Martin and Austal USA; both of these designs meet the program's Joint Requirements Oversight Council validated requirements. Both variants have successfully completed Initial Operational Test and Evaluation, Total Ship Survivability Trials, and Full Ship Shock Trials. Additionally, each of the LCS variants has completed a deployment to Southeast Asia and has participated in a wide range of Fleet operations.

The Navy regularly conducts reviews of shipyard schedules. There are four LCSs planned for procurement between FY 2018 and FY 2019 that have yet to be awarded. The Navy intends to continue the procurement of both LCS variants in FY 2018 and will award at least one ship to each offeror, subject to fair and reasonable pricing, with additional ships to be awarded based on the lowest total evaluated price. These ships, along with the current 13 ships that will still be under construction in FY 2019, will allow each industry team to be competitive for the future Guided Missile Frigate (FFG(X)) Detail Design and Construction award in FY 2020. Additionally, the Department will work with industry to evaluate the potential to shift the construction schedule forward for the Multi-Mission Surface Combatant.

The Department is committed to continuing to build capacity in our Fleet, and the Small Surface Combatant (SSC) Force plays a vital role in accomplishing that goal. The Navy's 2016 Force Structure Assessment re-validated the requirement for 52 SSCs, which is comprised of LCS and FFG(X). The Navy will continue to balance budget decisions with the health of the SSC industrial base to ensure delivery of the capabilities needed in order to support today's Fleet.

Thank you for your continuing support of the Navy. A similar response has been sent to each of the signatories of your letter. Please let me know if I may be of further assistance.

Sincerely,

Richard V. Spencer

Secretary SPENCER. The overview is that there will be the ability for the Secretary to be involved in the allocation of the ships and the awarding of the ships. As you know, when it comes to Wisconsin, the Saudi award is up there. One of the other levers that we'd like to see what we could do is see how do we pull that to the left, how do we manage the industrial base with all the tools available to us in light of the awards that we have? But, rest assured that the health of all the organizations involved in supplying goods and services to the Navy are being taken care of and analyzed.

Senator PETERS. Thank you, Mr. Secretary, I appreciate that.

General Neller, as you are well aware, the future of warfare will be changing dramatically. We've had the—those discussions on many occasions, as I've had with the other two gentlemen here. But, as we bring in new technology, whether it's autonomous vehicles or AI [Artificial Intelligence] systems, you need to make sure that you can actually deploy those, and that the men and women who are out in the field are able to integrate that into doctrine and tactics.

I was taken by an article that recently came out that showed the Marines are giving quadcopters to every squad, that are actually integrating that technology into the field as we speak. Could you speak to that and the importance of it and how we need to continue to be looking at integrating this technology in our units every day?

General NELLER. Senator, thanks for the question.

That's a fact, that we are going to deploy, whether we make them ourselves in our own fab labs or we procure them, that every rifle squad is going to have this ability to fly a quadcopter in front of them so that they can get a better appreciation of what lays in front of them. But, it's not just that. It is all the things that you mentioned, whether it be autonomy, robotics. I think we're still trying to figure out what AI can do, as far as the analysis of big information, making decisions, the future of biomedicine, things like that.

So, the way we're doing it—and I think the other services—certainly my shipmate, Admiral Richardson's folks are the same—where you take an exercise that we're going to do, and we'll take some technologies, and we'll apply them in that exercise so we don't have to create another event. And we'll use the exercise as an experiment. And whether it be autonomous ships or undersea vehicles or swarming drones under the water to find mines or to find pathways or to destroy mines, unmanned aircraft provide radio relay or electronic warfare, or to give you better ISR, all those things are doing on. What we're trying to do is, we realize that we need it to go faster.

As was mentioned about the development of technology in the commercial world, we all have officers out in Silicon Valley. They maintain contacts through an office called DOAX. There's also one in Boston and Austin that was developed by the previous administration, Secretary Carter. So, we're out there kind of doing reconnaissance of what's out there so that we know what's happening. We look at these different technologies and we take a chance and play with them. We make a bunch of small bets, and then, if anything works and we let the Marines look at it, and they say, "Yeah, this is good," or, "This is not," and then we'll try to figure out how we're going to put some money down on it and further develop it.

Senator PETERS. Thank you, General, appreciate it.

Senator INHOFE. Thank you, Senator Peters.

Senator Sullivan.

Senator SULLIVAN. Thank you, Mr. Chairman.

Good to see you, gentlemen. Thank you very much. I really—very much appreciate your fine leadership, as demonstrated by your decades of service to your country and by your testimony today. I think it's been outstanding and direct.

I want to get back to this topic of the National Defense Strategy and the return to great-power competition, which means countries like Russia, China, North Korea—not that they're a great power, but that kind of battle. As you know, gentlemen, through history, that also means, particularly when you're looking at that part of the world or those countries, that means cold weather, that means mountainous terrain, that means large-scale maneuver in high-end fights. The last time we did that as a country was in the Korean War. I know all of you have read T.R. Fehrenback's "This Kind of War," but, as you know, that didn't go so well initially in that fight, because we weren't ready.

So, a couple of questions that relates to getting back to that. You may have seen, in the Arctic Strategy that was required by this committee, Secretary Mattis stated that, "The Arctic is key strategic terrain. Russia is taking aggressive steps to increase its presence there. I will prioritize development of an integrated strategy and training for the Arctic."

Two questions. General Neller, I was glad to see that the Marines had just taken part—I think several hundred marines—in Arctic Edge 2018, up in Alaska. I would welcome your thoughts on more cold-weather training, more large-scale maneuver training, lessons learned, perhaps, from your Alaska training, more opportunities for training in cold-weather places, like Alaska, which has enormous ranges, as you know.

Mr. Secretary—Secretary Spencer, I would like to get your views, just on—you know, the NDAA last year required the DOD and DHS to look at the strategic Arctic port idea. The Arctic Strategy talks about FONOPS [Freedom of Navigation Operations] in the Arctic, which Admiral Richardson has mentioned. It's a good idea, but right now we don't have the capacity or capability. So, your thoughts, actually, both of you gentlemen, you know, on the 355-ship Navy, the idea of ice hardening. I mean, what are we doing, in terms of a strategy? A high-end, great-power competition fight could be in the Arctic, certainly could be cold-weather mountain training, large-scale, high-intensity. What are the Marines and Navy doing? Basically, focused on those questions, maybe, General Neller, if we can start with you, sir.

General NELLER. Well, Senator, you know that we've gotten back into the cold-weather business. When Soviet Union was the only pacing threat, we were at a mission in Norway as part of the defense, the NATO mission. And whether it be at the end of Desert Shield, Desert Storm, and the dismemberment of the Soviet Union, and then operations in Iraq and Afghanistan, you know, we just kind of went away with it. We still sent units up there, because going to cold weather is a good training—is a good discipline-builder. But, the skillsets, the equipment, and the expertise atrophy.

General NELLER.—to lead to more than small units. And so, we realized we needed to get back into it. So, part of it was what we did up there on Arctic Edge. We've had engineers, as you know, up there, working on a road project. We've got 300 marines in Norway. We're waiting for the Norwegian Government to potentially give us the opportunity to send more there to work with our NATO partners, because it's an opportunity to learn from them, because they really do understand how to operate and move large formations.

There will be a large exercise in—NATO exercise this fall, called Trident Juncture, which will be a big amphibious exercise, where the Navy—many navies will be there, operating in a cold environment, for all the reasons you say. We can't assume that we're going to fight in a desert. It's not going to be a temperate climate. It could be in the Arctic. It could be in the northern edges of any portal latitude or longitude of the world.

And so, we're working hard on that. The whole force is not going to be able to get trained in that. We need—just need enough people who know what they're doing so, if we get there, particularly the maneuver forces are able to function in—effectively in that type of an environment. But—we're a work in progress, but we're headed in the right direction.

Senator SULLIVAN. You see more opportunities for training in Alaska?

General NELLER. You know, I've been up there with—at your invitation, in Alaska. We send our aircraft up there, because, at Eielson Air Force Base, the range up there is three times the size of the range at Nellis. It's a great place for our partners to go. But, I do think we're going to try to do our very, very best to get certainly more deployments for training up to Alaska to take advantage of the terrain and the climate.

Senator SULLIVAN. Thank you.

Mr. Secretary?

Secretary SPENCER. Senator, you and I have spoken about what Alaska has to offer. Suffice it to say that I'm a bull in that regard. You have infrastructure up there, you have the ranges up there. And we have the ability, as the Commandant just said, to access that. And we look forward to seeing how we can maximize that, going forward.

When it comes to the Navy and the Arctic—how we're handling the Arctic—as you know, in 2014, we had our Arctic Roadmap. And now you will see, this summer, we will deliver the Navy's Arctic Strategy. In October of last year, one of my first trips, OCONUS [Outside the contiguous United States], was to go to the Arctic Conference in Reykjavik. And before that, I stopped off with our terrific allies in Norway who are just doing yeoman's work monitoring the gap. But, they opened my eyes as to what's going on in the Arctic. I had read about it, but, when you see what's going on there, what Russia is doing, repaving 12,000-foot runways, 10,000 spetznaz up there in Barracks four, search and rescue, we need to have presence up there.

The complication, as you well know, because we've talked about this, is—icebreaking is one of the complications. It's not a mission of the Navy. We are working hand in hand with the Coast Guard. In fact, we have just finished helping them design in requirements for the next class of icebreaker. But, that is their mission.

That being said, we do not have ice-hardened ships. There is a new terminology up there, called the Blue Water Arctic, that there now is open blue waters up there. The CNO and I have talked about, How do we have presence up there? We're working on that. And when we see our strategy roll out, you will see more this summer.

Senator SULLIVAN. Great. I appreciate it.

Thank you, gentlemen.

Senator INHOFE. Thank you, Senator Sullivan.

Senator Gillibrand.

Senator GILLIBRAND. Thank you, Mr. Chairman.

Admiral Richardson and General Neller, General Milley told me, last week, that there were, quote, "precisely zero reports of issues of cohesion, discipline, morale, and all sorts of things in the Army as a result of open transgender service." Are you aware of any issue of unit cohesion, disciplinary problems, or issues with morale resulting from open transgender service?

Admiral RICHARDSON. Senator, I'll go first on that. You know, by virtue of being a Navy sailor, we treat every one of those sailors, regardless, with dignity and respect that is warranted by wearing the uniform of the United States Navy. By virtue of that approach, I am not aware of any issues.

Senator GILLIBRAND. General Neller?

General NELLER. Senator, by reporting, those marines that have come forward—there's 27 marines that have identified as transgender, one sailor serving—I am not aware of any issues in those areas. The only issues I have heard of is, in some cases, because of the medical requirements of some of these individuals, that there is a burden on the commands to handle all their medical stuff. But, discipline, cohesion of the force, no.

Senator GILLIBRAND. Can you amplify what burdens on the command are related to medical issues?

General NELLER. Some of these individuals—and, you know, they've resolved whatever it was that—as they went through the process of identifying other than their birth sex, and so they're going forward. And I think those that came forward, we have a—we have to honor the fact that they came out and they trusted us to say that, and that we need to make sure that we help them get through that process. Some of them are in a different place than others. And so, there is—part of it's an education, but part of it is that there are some medical things that have to be involved as they go through the process of transitioning and real-life experience and whatever their level of dysphoria is. So, for commanders, some of them have said, "No, it's not a problem at all." Others have said that there is a lot of time where this individual is—may or may not be available.

We're all about readiness, we're looking for deployability. But, in the areas that you talked about, no, I have not—I have not heard of or have reported to me any issues.

Senator GILLIBRAND. Have you had the opportunity, General Neller, to meet with any of your transgender troops?

General NELLER. Yes.

Senator GILLIBRAND. What did you learn from those meetings?

General NELLER. I learned that—I learned a lot about the experience that they had. I learned that—I met with four—actually, one was a naval officer, one was an Army staff sergeant, one was a marine officer, and one was a Navy corpsman—and I learned about their desire to serve. I learned about, you know, where their recognition of their identification opposite their birth sex. We had a very candid, frank conversation. I respect—as CNO [Chief of Naval Operations] said—respect their desire to serve. All of them, to the

best of my knowledge, were ready and prepared to deploy, and they— as long as they can meet the standard of what their particular occupation was, then I think we'll move forward.

Senator GILLIBRAND. Thank you, General Neller.

Admiral Richardson, what are you doing to ensure readiness at the personnel and unit level, in light of this new policy that's come forward from the White House, in terms of a new burden placed on transgender sailors and marines?

Admiral RICHARDSON. Ma'am, I will tell you that we're—it's steady as she goes. We have a worldwide deployable Navy. All of our sailors, or the vast, vast majority of our sailors, are worldwide deployable. We're taking lessons from when we integrated women into the submarine force. And one of the pillars of that was to make sure that there were really no differences highlighted in our approach to training those sailors. That program has gone very well. And so, maintaining that level playing field of a standards-based approach seems to be the key to—a key to success, and that's the approach we're taking.

Senator GILLIBRAND. Thank you, Admiral.

You and I had a long conversation about military justice. We talked about some of the sexual harassment and assault issues that are within the Navy. We had a issue with regard to "Bad Santa," as you know, where your public affairs officer was allowed to stay in his position for several months despite his clearly inappropriate behavior. Do you have a sense of what message members serving under you received from him being allowed to stay in that position? Have you changed your approach because of that incident?

Admiral RICHARDSON. The beginning of that approach was really defined by making sure that we got a thorough investigation into a complicated scenario there with allegations and counter-allegations. So, that—the investigation took some of the time.

Having said all that, I've become acutely aware that that may have sent a bad message, particularly to the survivors of the behavior. And so, that—you know, my radar has been completely retuned, in terms of sensitivity to that message. I hope that we've arrived at a good place at the end of the—at the end of this event. It took longer, in hindsight, than it should have. If I was going to do it again, I would move faster.

Senator GILLIBRAND. Thank you, sir.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Gillibrand.

Senator Scott.

Senator SCOTT. Thank you, Mr. Chairman.

Thank you, to the panel. Thank you all for your service to the country.

Secretary Spencer, good to see you again. I'm sure that you're fully aware of the Navy Working Capital Fund created back in 1949. These working capital funds insulate the military services from Government shutdowns, labor strikes, and other destructions. They ensure many of our Government-owned repair depots and facilities can stay operational and keep our most highly skilled workers employed when Navy requirements for similar work slows down.

We have some of the greatest capabilities in and around Charleston. SPAWAR [Space & Naval War Systems Command], to be specific. The capitals—their capabilities are pretty powerful. My question is: As you look at the restrictions on the work that the SPAWAR and other facilities like that can do outside the scope of the Navy—I know that there were some restrictions placed on how those resources can be used—do you see any restrictions being lifted? Because, as I think through the process of finding the talent that we see at SPAWAR, it's really difficult to replace that talent if we don't use and maximize their potential outside the scope of the Navy.

Secretary SPENCER. Senator, that's a question that is front and center when it comes to our human resources allocation and what we're going to do to keep people. Obviously, whether a pilot, you want to give them flight hours; whether an IT technician, you want to give them challenges, you want to provide work; whether SPAWAR is doing exploratory work, you want to keep them engaged, because that's the quality of life, that's what they're there for. We are working right now at any way possible to make sure that we're at 100 percent capacity for the people, to give them the desire to stay and have a career in the Navy.

Senator SCOTT. Does that suggest that looking for work in other service branches outside of the Navy is something that's on the table?

Secretary SPENCER. If, in fact, we have the bandwidth, yes.

Senator SCOTT. Okay.

I understand that Russia is building several new classes of submarines. Are you concerned that Russia may develop an advantage in this area?

Secretary SPENCER. Always concerned, Senator. If you look at the era that we're entering now with the power competition, they did not put down their research pens and pencils over the past 20 years. They have launched a new submarine that I can safely say is closing the gap on some of our technologies. But, we are hard at work, also, to make sure that gap does not close and that the rate of the gap does not increase.

Senator SCOTT. All right. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you.

Senator Hirono.

Senator HIRONO. Thank you, Mr. Chairman.

General Neller, I share Senator Reed's concerns regarding what you are doing to address sexual harassment and assaults in the Marines, and the importance of staying the course. So, thank you for what you're doing. Keep doing it. And, of course, the concern regarding sexual harassment extends to the other services and—as brought out by Senator Gillibrand.

I have a question for Secretary Spencer. The Navy has laid out an ambitious plan to spend $21 billion over 20 years to modernize our public shipyards, which I applaud, because, as you know, Hawaii has one of these public shipyards. But, I am concerned that, as we talk about shipbuilding and service-life extensions to get to the 355-ship Navy, we might lose focus on maintenance capacity and capability. What is the impact on the shipyard modernization

plan now that the Navy is pursuing service-life extensions of five attack submarines? Will the modernization timeline be sufficient to meet this new demand in addition to other work already programmed and still meet the biggest challenge of being ready to handle the *Virginia* payload module-equipped ships in the future?

Secretary SPENCER. Senator, the maintenance equation in the three pipes that I talked about—platform, people, and maintenance—is front and center. Just last week—we have a terrific repository of institutional knowledge in a fellow by the name of Ev Pyatt, who worked under the Reagan administration in building and maintaining the Navy's growth during that period of time. He has been charged by me to go look specifically at the present state of shipyard maintenance and what is needed going forward with our projected plan to grow the fleet and maintain the fleet.

Right now, as we look at the steady-state, as the report said, we can accommodate what we have now. As we grow, we're going to obviously need to not only fix—and when I say "fix," that means improve the flow through our existing yards—and also enhance the processes available to our existing yards. We're going down to speak to—it's fascinating—speak to some of our civilian counterparts to talk about flow control. That's the key thing when it comes to maintenance through yards.

Senator HIRONO. Well, I'd like to have your commitment that we will continue to focus on the need to modernize and increase the capacity and capability of our people at the shipyards, because they are all ready and eager to go, but they need the tools in which to proceed. I'd also like to point out that the Pearl Harbor Navy Shipyard has a special challenge, in that a huge percentage of that shipyard is historically preserved. So, you know, it takes more to get the kind of modernization infrastructure changes that we need to do at Pearl Harbor——

Secretary SPENCER. Senator, I will put a footnote on there that we are going to have to come back to you all about historical preservation, because historical preservation and industrial modernization do not go hand in hand.

Senator HIRONO. Often there is——

Secretary SPENCER. Yes.

Senator HIRONO.—big tension there. I am well aware. So, I want to work with you to figure out how we can make sure that our shipyard in Hawaii gets what they need also.

Admiral Richardson, in your written testimony, you mentioned that the Navy was able to arrest the decline in readiness with the request for additional appropriations, RAA in 2017, while using 2018 and 2019 funding to further restore readiness. How long will it take to get fleet readiness to an acceptable level that we are able to sustain?

Admiral RICHARDSON. Ma'am, thanks. A lot of that's going to depend on the continuation of stable and adequate funding and, you know, the passing of budgets on time. The most toxic thing to readiness has been continuing resolutions and the Budget Control Act. And so, you know——

Senator HIRONO. Assuming that we give you adequate funding and it's not a start-and-stop every 3 months of CRs [continuing resolutions]——

Admiral RICHARDSON. Yes, ma'am.

Senator HIRONO.—how long will it take?

Admiral RICHARDSON. We see—you know, it took some time, a decade, to get into this. We anticipate in getting out of this in about half of that time. And so, I look to the early 2020s—2021 and 2022—to start getting back to that level of readiness.

Senator HIRONO. Totally dependent on the steadiness of our funding.

Admiral RICHARDSON. One-hundred percent——

Senator HIRONO. Understand.

Admiral RICHARDSON.—dependent on that, ma'am.

Senator HIRONO. Secretary Spencer, you noted in your written testimony that the Department has taken risks by underfunding infrastructure investment in installation operations over the last decade. I'm pleased to see the budget request includes the largest request for MILCON [Military Construction] in quite some time. Besides the public shipyard plan, how long and how much MILCON funding will be required to dig out of the hole we have in infrastructure and installations? And again, let's assume steady funding.

Secretary SPENCER. Yes. Underscoring, again, steady funding. Right now, Senator, we're going to—I think that that what—the number is, we're coming up to funding 80 percent of our needs, which, to me, is an anathema, but I realize we are portfolio managers. Our infrastructure is a key component of readiness, and we have to address it in such. With the present line, you're probably looking at the same for readiness with the fleet, which is in the early '20s.

Senator HIRONO. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Hirono.

Senator Tillis.

Senator TILLIS. Thank you, Mr. Chairman.

Gentlemen, thank you for being here and for your service.

General Neller, I had the pleasure of sitting next to Ms. Neller yesterday in a meeting with a few dozen military spouses. I tallied up the number of years that they have experience, about 467 years of experience in the room as military spouses, some as—in your case, as far as 40 years back. Can you tell me a little bit about your belief or agreement that making sure that we take care of the families and we take care of the issues of multiple deployments as having some effect on the readiness of the marine?

General NELLER. Well, Senator, first, thanks for taking the time to meet with our spouses. A lot of experience in the room, a lot of wisdom, a lot of PCS moves, a lot of overseas time, a lot of time without us being around. But, clearly, we all know, when we serve, that—or even in the corporate world—I think you recruit the individual, and then you've got to retain the family. The family's got to be onside with doing what they're doing, particularly this kind of a life. So, I don't think they expect everything, but they do have a certain expectation that there's going to be housing available and schools available, and they're going to be able to live their lives, and that those that wear the uniform are going to be around on occasion.

If they have a profession—and the demographics has changed. When I came in, not that many, particularly of the officer spouses, worked. Now that's very different. And so, there's an expectation that they'll have an opportunity at least to compete for a job. Certain places where we are, you know, we're in a more rural area or more isolated area, finding that job, particularly if you have a profession, is difficult. And so, I don't think they expect special treatment. I think they just would appreciate, you know, recognition and some opportunity.

Obviously, in a place like Washington, D.C., or in southern California, it's not anywhere near the issue as it is in some place like Camp Lejeune, North Carolina, or 29 Palms.

So, we have to work to make sure that, not just the servicemember wants to stick around, but the family does, too. And so, that's part and parcel, whether it be facilities or recreational opportunities or schools or stuff for the children, mental health. Medical is a big deal. All those things go together as a whole package to try to retain the best and most capable members of our force.

Senator TILLIS. Well, we're working with the staff on some specific ideas that came out of the meeting yesterday, and that I've heard time and time again. But, I think that many—people need to understand that the unemployment rate among military spouses, depending upon which numbers you want to believe, is somewhere between 12 and 28 percent. National average is about 4 percent. That's a problem. If you've got a marine worried about paying the bills and putting their kids through school, that's a problem. It's a distraction they don't need. So, we're going to work on that, but I think we're—we also need to gather better data so we can be directed. It's not only the professional positions, it's somebody that just wants a job. We've got to figure out a way to do it, make them more mobile, make it less costly and less disruption to them as they're deployed.

In my remaining time, Mr. Secretary or Admiral, we tend to get caught up with numbers here, and we have a checklist. I know the magic number for the Navy is 355. I believe that we're going through a period of time now that I'm more worried about the capabilities that that current 355 number looks like than the number 355. So, as you move forward and you think about modernization over time, I'd be kind of curious to see how you're going to come back to us and say, "Guys, the number is a little bit different, because we've got—we may have to have fewer or more, but we're going to a capability for the least amount of money spent, particularly because Congress is not particularly good at completing its mission, giving you certainty over funding." So, I'd like to get your thoughts on exactly how you're going to deal with that. Because you're not going to go to another hearing in the foreseeable future where people aren't going to be ticking off, "Where are my ships going to be built, particularly if it's in my State? How am I getting to that 355 number?" I want to really start changing our thinking on that so you're focused on capabilities and not hitting one number target.

Admiral RICHARDSON. Senator, that's a great question. I would tell you, as I think about it, it's about naval power. And naval power has a lot of components: capacity—you know, we—there is

a big convergence of intellectual thought that says we do need a bigger Navy, right?—capacity, quantity has a quality all of its own. But, to your point, we also need a better Navy, right? We need a more capable Navy that incorporates new technologies, directed energy, high-power microwave, hypersonics, you know, and so forth, that make each one of those platforms more capable. Then, finally, we need to find a way to increase the power of that force by networking it together to allow it to adapt and reconfigure on the fly in the face of threats. So, there's much more to naval power than just number of ships.

Senator TILLIS. Thank you.

Secretary SPENCER. Senator, I'd just reverberate that. I mean, the whole goal is, whether in a F–22 in the air, targeting a target and pushing a button and the GMLRS rockets hit it, or the Tomahawk out of the submarine hits it, or the Standard Missile 6 off the DDG hits it, it's all going to be intertwined. That is the gamechanger. So, it's power we're really focused on. Yes, we need a goal to increase the capacity, totally agree. But, we need to focus on the power, which is exactly what—we're going to use technology as a force multiplier.

Senator INHOFE. Thank you, Senator Tillis.

Senator Kaine.

Senator Tillis, presiding.

Senator KAINE. Thank you, Mr. Chair.

Thank you, to the witnesses, for your service and your testimony.

General Neller, I was also at the event yesterday with Darcy, who is a great example, and the folks around the table were really, really sharp in offering us perspectives. I have two pieces of bipartisan legislation, the Military Spouse Employment Act of 2018 and the Jobs and Childcare for Military Families Act, that have been introduced with bipartisan colleagues on this committee, that we're hoping to add to the NDAA as we work in the coming weeks. But, I appreciate Ms. Neller's leadership in this area.

I want to ask each of you sort of a budget question. I'm happy with the budget we passed, the fiscal year 2018 budget, in terms of support for investments to do the kinds of things you're talking about. But, there can always be a challenge. When the budget gets done 6 months into the fiscal year, and then the money comes at the end of the fiscal year, there's the question about whether you can spend the money and do it responsibly. So, we want to increase the investment. We also want to do it responsibly. We made that challenge harder by being so late. What are you doing to grapple with that issue?

Secretary SPENCER. I'll start at the top, Senator, and then defer to my two business partners, here.

But, we have started the message, before the turn of the year, with the BSOs, in saying, "We are going to hopefully have the pressure to put resources out in a very responsible manner, so get your teams lined up. At this point, large—let's start executing to 100 percent of where we were, which, at that point, was fiscal year 2017, and get the muscle movements correct." We now have the new dollars and cents, the curve is now working on the fiscal year 2018 curve. We have teams set up, and the arc now of de-obligating money down to a—much more of a science than we had before, to

be very frank with you, and if, in fact, teams are saying, "I don't think I can make my goal," we're going to come back to you—we're going to hit the BTR at 25 percent or we're going to come back to you for the reallocation. And we're having the other projects lined up so we can use as much of these funds as totally possible. That's the mindset everyone's working at in both services.

Senator KAINE. Admiral Richardson and General Neller, you want to add to that?

Admiral RICHARDSON. Sir, I'll tell you, it's like that quote about real estate. For us, it's just—the three most important things are execution, execution, and execution. And we are monitoring that day by day to make sure that we are, one, you know, executing those funds; two, executing them on things that are going to deliver naval power; and the—three, executing them in a way that is auditable and transparent to you.

Senator KAINE. General Neller?

General NELLER. Sadly, we're getting pretty good at this because we've gotten a lot of practice. Last fiscal year, we got the money late, and we had to spend a certain amount of money every day, and everybody kind of raised their game up. It would be nice, one year, to just get the money at the beginning of the year and have the whole year to spend it. I think we'd make better decisions. I think it would settle the force down. I think everybody would realize that, hey, we're going to get—it's going to be there. I think our vendors would appreciate it.

But, to answer your question, Senator, you know, we're prestage, we're ready to go, we watch it every single day. At a certain point, if people can't spend it, then we'll move it to other people who have other things that are viable that we can put on contract. Contracting is kind of the long pole in the tent, just to write the contract in a proper way so that the money is spent properly. And we're not going to go out there and buy furniture and carpet. You know, we've got other really more important things to do.

Senator KAINE. General Neller, I want to ask you just an example of this, because it affects readiness. I'm looking at your written testimony, how you're dealing with this challenge. Page 12, "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 overutilization 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 effects industry. Often, when funding becomes available late in the year through CRs, the industrial base is not energized to meet demand." Talk a little bit about how you're trying to grapple with this aviation issue in light of the budget that we just passed.

General NELLER. There are a number of things that we're trying to do, the most important of which is buy new aircraft and make sure that the aircraft we get are of sufficient quality that we can replace old aircraft and we don't have to spend money twice to buy new but, you're always in a legacy fleet, whether it's ground equipment or air equipment. So, first, buy new. Second, we've funded readiness in this budget at a much, much higher level than we ever

have before, so we got more money for parts and spares. The flight-hour program is out there. Flight hours are up—not yet to where we want it to be. It's hard to say that you could ever fly too much. But, we've—part of our recent readiness issues, and some of the things that have happened is, we've got a whole, like, 5 or 6 years of pilots who were—used to be, if they were senior captain and major, they are, like, 1,500 to 2,000 hours; now they've got under 1,000, because they haven't been flying enough. And so, we're trying to remedy that. And, just like CNO said, if we didn't—it didn't happen overnight to get to this point, it's not going to get fixed overnight.

So, steady, consistent funding is what's going to allow suppliers out there to get us parts, because they're going to believe that the Government's going to be there, that they can keep their workforce, they can order the stuff that they need to build the parts, and then we can get it faster and get more airplanes and other equipment ready.

Secretary SPENCER. Senator, let me add something on there. One of the things that we've been working on, obviously, is a statement that I make that the best solution provider for a problem is the person looking at the problem. This bubbled up through the wings all the way up to our depot maintenance.

We have a new pilot program underway, called Depot Readiness Initiative. What we were finding out was, in the case of a legacy plane, it goes up into depot, it's 1,000 man hours to take it apart and do the depot-level maintenance, while, back at the squadron, the calendar maintenance clock was still running. So, down the plane comes back to the squadron, and you've got to spend another 500 hours taking things apart and putting things back on to make sure that it's brought up to certification. Why not do that up at the——

Senator KAINE. Right.

Mr. SPENCER.—depot-level maintenance? Sounds like a very simple thing to do, but there were funds that had to be arranged from different pools of money. We're trying this. The flow is increasing. We think this is something we're going to do. But, this is an example of how we're getting at it.

Senator KAINE. Excellent. Thank you.

I'm over my time. I appreciate it, Mr. Chair.

Senator TILLIS [presiding]. Senator Kaine, I also wanted to thank you for participating in the marine spouses meeting yesterday morning. Appreciate your focus on the issue.

Senator Blumenthal.

Senator BLUMENTHAL. Thanks, Mr. Chairman.

I want to reiterate my thanks to all of the families. As the numbers of deployments have increased and the proportion of Americans involved directly in these wars over the last 15 years has diminished, we've been fighting a longer period of time in our history than ever before, with a smaller part of the population, which exacts a heavy toll on our families. I appreciate your sensitivity to those issues. And we need to do more, and do better, to support them.

Mr. Secretary, in last year's NDAA, I required, through an amendment that I offered, or the NDAA did, the Navy to submit

a report on how the maintenance backlog will be addressed. I know there's been some discussion already this morning. The report, delivered in February, stated, quote, "The Navy intends to execute all the workload programmed at the naval shipyards with no availabilities moving from public to the private sector."

In the House Armed Services Committee just last month, you stated and acknowledged that private yards have to be more involved with maintenance. It's a simple fact that there's more work than the public yards can be done. Is that still your view?

Just for the record, let me state my view, that, with respect to submarine maintenance, the private yards are tremendously important, and use of them is vital, not only because there's more work than the public yards can do, but also because our defense industrial base, our workforce, needs to be retained and, in fact, enhanced because of the need to smooth the maintenance work and new work, and keep those people on the job. So, perhaps you'd care to comment.

Secretary SPENCER. I'd—I'm going to use your statement as my answer, Senator. Definitely, the way that we are looking at it is, we'll load the public yards to 100 percent, and then we have to look at elsewhere to relieve the pressure. This goes in concert with not only the efficiencies that we'll get by putting ships through the maintenance process on a flow-control basis, but this also addresses your concern, and mine also, which is the health of the industrial base.

Senator BLUMENTHAL. So, you would commit to shifting a number of near-term backlog maintenance availabilities to the private yards to help smooth out the workload.

Secretary SPENCER. If—yes. If, in fact, Senator, we have the workflow charts that we can actually work with to make sure that we're not overloading someone, yes. We're going to do it for efficiencies.

Admiral RICHARDSON. Yes, Senator. I think, in fact, we've already decided to do some of that, so our behavior is really the biggest indicator of where our thinking is. It's just a plain fact that we've got to work together to get this done.

Senator BLUMENTHAL. Well, I agree that actions speak louder than words, and I'm glad those actions are taking place.

Secretary SPENCER. The public yards—I mean, behind the private yards, Senator, are also very engaged in this.

Senator BLUMENTHAL. Let me ask you—General Neller and I spoke a little bit yesterday about the F–35. Could you give me your assessment, in terms of the Navy and the Marine Corps, about the capabilities of the F–35 and your commitment to continuing that program?

Secretary SPENCER. Senator, the F–35 is an amazing piece of gear in many fronts. In fact, I'll say all fronts, including the procurement side and the sustainment side. It's proving out, in the Marine Corps, to be what we've advertised it to—what they advertised it to be. It's hitting the requirements. I would not be—I'd be remiss if I was to say that we don't have our challenges, as far as procurement price and sustainment, which we are working on tooth and nail right now, from the Deputy Secretary on down to the JPO

[Joint Program Officer], Ms. Lord, and the service secretaries, Air Force and Navy.

You saw our latest move that was made. We are going to be a responsible client, and we are not going to accept gear that is not of quality. We will work with the prime to make sure we come to a conclusion on how we're going to handle that. But, going forward, all parties are focused on, as I said earlier, not only the acquisition cost, but, almost more importantly, the sustainment costs.

Senator BLUMENTHAL. I think there's agreement among all of the contractors, from the prime to the subs, that driving down the cost is a priority. The war on cost——

Secretary SPENCER. Exactly.

Senator BLUMENTHAL.—as it's been called, is a common objective, here.

Secretary SPENCER. We are partners in that regard.

Senator BLUMENTHAL. Thank you.

Thank you very much, Mr. Chairman.

Senator TILLIS. Senator Donnelly.

Senator DONNELLY. Thank you, Mr. Chairman.

I want to thank the witnesses for being here with us.

Secretary Spencer, I've had the privilege of having Admiral Richardson and General Neller at Naval Surface Warfare Center Crane. I am hopeful that you'll be able to come out, as well, and see the hard work of all those good people.

Secretary SPENCER. Most definitely. It's on the list, Senator.

Senator DONNELLY. Thank you very, very much.

Additionally, Admiral Richardson and General Neller, I appreciate all the work you've done on addressing military suicide. You know that suicide risk, it often isn't tied to deployments or combat experiences. We can't be restricting our most rigorous mental health assessments just to the deployment cycle. You've been incredibly helpful in all of this and in implementing legislation. You told me, last year, that your services were on track for full implementation of the Sexton Act requirement for the annual mental health assessment by October of 2017. Can you confirm that you've reached that milestone? Were there any difficulties, or are there any other things that you feel we might be missing in this area on this end?

Admiral RICHARDSON. Sir, we've reached that milestone, last July, ahead of the October deadline. We've conducted close to 100,000 of these types of assessments. I will tell you that it is a vexing problem. Last year was not a great year for us with respect to suicide in the Navy. It is not linked, all the time, to deployment cycles, as you say, or even deployment in any sense.

We've also had some tremendous, stories, where servicemembers have seen their shipmate in trouble, have intervened, and have saved a life. I think that is where the center of gravity of our efforts are, is at that peer-to-peer level.

Senator DONNELLY. Pushing it down.

Admiral RICHARDSON. Exactly right, yes, sir. And so, those are the people that have the most sensitivity, the most awareness. I think that they are the most capable, in terms of stepping in, making feel—making that sailor feel like they're not alone, there's hope

at the end of the tunnel, here, and shepherding them through that hard time.

Secretary SPENCER. Senator, as an example—and I'll throw out a vignette, because I think it's important—last Christmas holiday time, one of our sailors out at Joint Base Andrews was coming back from an engagement with a fellow airmen and noticed something was wrong. They checked into their rooms, and the sailor went back to knock on the door and prevented a suicide.

Senator DONNELLY. General, how is the Corps doing? Is there anything on our side here that we can do to be of help to you, sir?

General NELLER. With regard to suicides, like the Navy, we, despite our best efforts—I mean, your goal is none. We know we're never going to get to zero. The people that have issues, then we do the health assessment, that are willing to come out and say they have issues, then we get them help, and there's things that we can do. All too often, though, we find—I mean, in some cases, when someone is—does take their own life, you know, there was some knowledge—the command. In many cases, though, Senator, there's—it comes as a complete surprise, despite our best efforts to know our people, then get involved through force preservation, particularly the more senior. We've had a number of officers, some senior enlisted, and not everybody just kind of sits around and goes, "I mean, I just talked to him or other the other day, and we can't explain it."

So, I think the Congress, and you particularly, have been very helpful. I think we have all the tools that we need. This is—you know, it's a mystery of life. I'm not going to blow it off. We're never going to stop trying to get to zero and make sure that people know that if they have an issue, there's no problem that can't be solved if you're willing to come forward and talk about it.

But, it's kind of a steady-state. I'm not saying that's where we are, but I could show you the numbers, and it's been pretty consistent over the last few years.

Senator DONNELLY. Well, please let us know if there's anything else we can do here to be of assistance to you.

I just want to mention quickly, Mr. Secretary, Admiral, yesterday the USS *Indianapolis* was launched. Our city is very proud of it. Our State is very proud of it, and it is going to be going into harm's way, and you have extraordinary crewmembers, an extraordinary group of people who are serving to make that successful.

I just want to follow up on Senator King's discussion about opioids, very quickly, and the role the Coast Guard is playing and anything you can do to help. We lost 60,000 young people last year, 40,000 to opioids, another 20,000 on top of that to overall losses to drug abuse. And so, this product's coming in from Mexico. It's coming in through our shores, and at the end of the road on each of these is somebody who makes a tragic decision, where we lose the next nurse in Jennings County or the next teacher in Marion County or the next sailor or marine from Evansville. And so, anything you can do as you coordinate with the Coast Guard, as you work with them to help with this scourge, and anything you, as you look at—and do it in a very unvarnished way—anything you see that we can do better—because, as I said, 60,000 this year, and next

year's expected to be even more. It is an American tragedy and an American crisis.

I want to thank you both for all your service. Mr. Secretary, also, you for your service. It is the highest honor, and we're really grateful to have you here.

Thank you.

Senator TILLIS. Thank you, Senator Donnelly.

Gentlemen, thank you for being here, for your service.

This committee is adjourned.

[Whereupon, at 11:39 a.m., the committee was adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR ROGER F. WICKER

STRATEGIC READINESS REVIEW AND COMPREHENSIVE REVIEW

1. Senator WICKER. Secretary Spencer, please provide an update on the status of implementing the recommendations contained in the SRR and CR to help prevent future collisions at-sea.

Secretary SPENCER. The Navy has identified readiness reform as a critical priority in the wake of the tragic USS *Fitzgerald* and USS *John S. McCain* collisions. In January 2018, the Navy established the Readiness Reform Oversight Council (RROC) to oversee implementation of CR/SRR recommendations as well as related recommendations from other sources (e.g., Government Accountability Office, Navy Inspector General).

Chaired by the Vice Chief of Naval Operations and Undersecretary of the Navy, the RROC is currently addressing 111 recommendations. To date, 35 of 111 recommendations have been fully implemented with over 70 percent expected to be implemented by the end of September 2018. Along with aggressively implementing the remaining recommendations, the Navy is simultaneously developing the tools and processes to ensure that implemented recommendations are effective. $38.3 million was appropriated for readiness reform in fiscal year 2018, $79.1 million requested for President's Budget 2019, and $601 million programmed for Surface Warfare readiness reform through the fiscal years 2019–2023 FYDP. The RROC also seeks to expedite an additional $66 million of unfunded priorities during the Mid-Year Review.

The status of a select few key actions taken to improve readiness across the fleet are described below.

7th Fleet Operations—7th Fleet has adopted new scheduling and force generation processes that identify mismatches in force employment and force generation while protecting training/certification periods for ships. Naval Surface Group Western Pacific (NSGWP) has been established to oversee maintenance and training for surface ships assigned to Forward Deployed Naval Forces Japan.

Command and Control—The Navy is undertaking a clean sheet review of the Administrative Chain of Command to optimize readiness, clarify C2 at all echelons and provide clear responsibility and accountability for force generation. As part of this initiative, 2nd fleet has been re-established to focus on warfighting and certification of deploying forces.

Mitigating Risk of "Can-Do Culture"—Multiple steps have been taken to properly manage supply and demand of operational forces to prevent overstressing individuals and units and avoid putting ship COs in a position to commit forces that do not meet full readiness standards. In addition to the above changes to C2 and operational scheduling practices, force-wide circadian rhythm implementation is underway to allow COs to better manage crew fatigue and properly mitigate operational risk.

Manning—Navy manning policies now prioritize Japan based ships. 6 of 11 Japan based Cruisers and Destroyers meet their manning targets with 10/11 expected by June 2018. New incentive policies have been enacted place to encourage sailors to select and extend in Japan-based billets. Manning statuses are reviewed monthly by Fleet Commanders to identify shortfalls.

Surface Warfare Officer (SWO) Career Path—The SWO career path is being restructured to emphasize mastery of seamanship and navigation skills. First and second tour lengths for Junior officers have already been adjusted to maximize at sea experience while changes to Senior Officer tour lengths are under review. Pro-

ficiency assessment and tracking mechanisms are also under consideration by senior Navy leadership.

SWO Training—Short and long term improvements are underway to expand training for bridge watch standers, emphasize higher-stress scenarios representative of high density shipping and extremis situations, and better utilize integrated simulator systems and yard patrol craft.

Surface Force Navigation Equipment—Plans are ongoing to accelerate replacement of surface search RADAR, modernize bridge equipment and transition to next generation electronic navigation systems.

QUESTIONS SUBMITTED BY SENATOR TOM COTTON

NATIONAL MARITIME INTELLIGENCE CENTER FACILITY

2. Senator COTTON. Admiral Richardson, why was the Office of Naval Intelligence parking garage replacement—located on the National Maritime Intelligence Center facility—not included in your fiscal year 2019 budget submission or the Future Years Defense Program?

Admiral RICHARDSON. First and foremost, the parking garage is safe for continued use. Project development is underway for the parking garage replacement project. The Navy intends to request funding in a future budget, not via the 10 U.S.C 2803 Emergency Construction authority as the estimated cost exceeds the $50 million statutory limit.

The Navy uses a rigorous process for prioritizing construction projects that evaluates requirements based on support to global posture, basing decisions, Fleet readiness and corrections required for documented life, safety, and health deficiencies. The Navy considers more than $4 billion of valid requirements each year.

As a result of multiple engineering studies, the Navy has completed $12 million of repairs to keep the garage safe and operational. To ensure the garage remains safe, the Navy conducts quarterly structural inspections.

Although there are no plans to demolish the garage in 2021, we are developing the replacement project. As required by the National Capital Planning Commission, a traffic study and site master plan are ongoing and scheduled for completion by the end of 2019.

Thank you for your continued support for the Navy and our maritime mission. I assure you we will continue to provide safe parking at NMIC, and look forward to continuing to work with the Congress regarding this issue.

3. Senator COTTON. Admiral Richardson, what are you plans for replacing the critical parking infrastructure at this important intelligence facility, and what is the current state of those plans?

Admiral RICHARDSON. First and foremost, the parking garage is safe for continued use. Project development is underway for the parking garage replacement project. The Navy intends to request funding in a future budget, not via the 10 U.S.C 2803 Emergency Construction authority as the estimated cost exceeds the $50 million statutory limit.

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Thank you for your continued support for the Navy and our maritime mission. I assure you we will continue to provide safe parking at NMIC, and look forward to continuing to work with the Congress regarding this issue.

4. Senator COTTON. Secretary Spencer and Admiral Richardson, what has the Navy done to acknowledge and act upon specific Fiscal Year 2017 Appropriations language, urging the Department and Services to prioritize needed workplace replacement projects, including the NMIC parking structure, in fiscal year 2018 and future budget submissions?

Secretary SPENCER and Admiral RICHARDSON. First and foremost, the parking garage is safe for continued use. Project development is underway for the parking garage replacement project. The Navy intends to request funding in a future budget, not via the 10 U.S.C 2803 Emergency Construction authority as the estimated cost exceeds the $50 million statutory limit.

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Thank you for your continued support for the Navy and our maritime mission. I assure you we will continue to provide safe parking at NMIC, and look forward to continuing to work with the Congress regarding this issue.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

SECTION 811

5. Senator SULLIVAN. Secretary Spencer, as a result of the misrepresentation of section 811 of the Fiscal Year 2010 National Defense Authorization Act, any small business, Native 8(a) sole-source contract above $22 million has to be approved by the head of Agency, in the Navy's case the Secretary of the Navy. This is an onerous requirement based on transgressions that occurred seven years ago and it has led to valuable contractors being excluded from sole-source contracts; zero in 2014. Per your commitment to me during your nomination, you stated you would determine if you could delegate down the level of approval authority below the Secretary level to approve Native 8(a) small business contacts above $22 million. If you found that you legally could, you committed to sending a memo to your contract officers telling to not hesitate to bring you 8(a) contracts over $22 million. What progress have you made on these two issues?

Secretary SPENCER. I have signed a memo to Department of the Navy contracting activities reaffirming that section 6.302–5(a)(4) of the Federal Acquisition Regulation (FAR) provides the authority to enter into sole source awards under the 8(a) program, including those valued over $22 million. Those sole source awards exceeding that value must be justified in accordance with FAR 6.303, and approved in accordance with FAR 6.304 by a flag or general officer or a civilian serving in a position above GS–15 under the General Schedule. The authority to designate approval authorities for all Justification and Approvals that do not require the approval of the Navy Senior Procurement Executive is delegated to the Department of the Navy's Heads of Contracting Activity (HCAs). The memo states that HCAs must ensure that dollar approval thresholds in the regulations do not unduly influence a contracting officer's business decisions. These thresholds are not intended as barriers to executing contracts that reflect the best business decisions for the Department of the Navy. I have asked that HCAs streamline the approval process for these and other actions within their contracting activities, consistent with the exercise of sound business judgment.

AVIATION READINESS

6. Senator SULLIVAN. Secretary Spencer, General Neller and Admiral Richardson, following recent accident data, Military Times published online a database of records that outline the rise of aviation mishaps during the past five years. Listed in the Marine Corps Times article "Aviation in Trouble" on April 16, 2018, reports show that the problem in the Navy and Marine Corps appear to be much more severe than those in the Air Force. What steps are being made to mitigate these deficiencies in aviation readiness? Can you provide a detailed response to the assertions addressed in this article?

Secretary SPENCER. The Department of Navy (DON) is capable today and will become more capable in the future. Recovering readiness and reversing years of strain on the force will take time, predictable and sustained funding and balanced investments. To recover aviation readiness and get aircraft back to the fleet, the DON has deliberately prioritized investments in both its primary and enabling readiness ac-

counts. The enacted 2018 budget and the President's 2019 Budget request fund the Flying Hour Program and Aircraft Depot Maintenance to maximum executable levels. Equally important, the 2018 enacted budget with the budget enhancement and the DON's 2019 request increases funding for aviation logistics, air systems support and aviation spares. Aviation spares are funded above historical levels to reduce repair part shortages and improve the range and depth of afloat spare parts in line with our intended operational availability. These efforts are beginning to take effect, with a steady reduction in aviation maintenance backlogs and with greater parts availability, more Fully Mission Capable and Mission Capable aircraft will be available for essential aircrew training and proficiency. This is a very high priority for the Department.

General NELLER. Although mishap trends have nearly doubled since 2013, the increase has been attributed to Class "C" mishaps (damage to aircraft of $50,000 or more, but less than $500,000; or a nonfatal injury or illness that results in one or more days away from work, not including the day of the injury).

- The more serious Class A and B mishap rates, among manned aircraft, have remained relatively steady over the last 5 years and are not contributing to the increasing trend we observed.
- Marine aviation's focus is readiness for combat. We continue to make moderate gains and recover readiness across every type/model/series aircraft while simultaneously transitioning to a modern fleet.
- We are incrementally stepping up to T 2.0 levels to ensure the Marine Corps remains the Nation's Force in Readiness. Our MC and FMC rates are steadily improving. The Marine Corps expects to recover training capability in fiscal year 2020 and a ready bench by fiscal year 2022.
- Flight hours are the true metric of health. Aircrew averaged 19.3 flight hours per pilot in March fiscal year 2018—an increase of nearly 20 percent from last year, and up almost 50 percent from two years ago. All communities have improved—some more than others. The Hornet community, for example, is flying 50 percent more hours today than it was two years ago.
- Previously underfunded readiness enabler accounts were funded to their maximum executable levels in fiscal year 2017 and fiscal year 2018. This allows us to focus on our number one readiness degrader: the lack of spare and repair parts. Fully funding our spares accounts is critical to recovery and modernization. We must have spares to recover readiness in our legacy aircraft and we must have spares to build up and sustain readiness in our new aircraft.
- We have a comprehensive approach to building readiness that includes several maintenance, supply, and manpower initiatives. These initiatives require stable, predictable funding and time in order for us to receive a return on our investment.

Admiral RICHARDSON. Our Navy is capable today and will become more capable in the future. Recovering readiness and reversing years of strain on the force will take time with predictable and sustained funding and balanced investments. To recover aviation readiness and get aircraft back to the fleet, the Navy has deliberately prioritized investments in both its primary and enabling readiness accounts. The enacted 2018 budget and the President's 2019 Budget request fund the Flying Hour Program (FHP) and Aircraft Depot Maintenance to maximum executable levels. Equally important, the 2018 enacted budget with the budget enhancement and the Navy's 2019 request increases funding for aviation logistics, air systems support and aviation spares. Aviation spares are funded above historical levels to reduce repair part shortages and improve the range and depth of afloat spare parts in line with our intended operational availability. These efforts are beginning to take effect, with a steady reduction in aviation maintenance backlogs and with greater parts availability, more Fully Mission Capable and Mission Capable aircraft will be available for essential aircrew training and proficiency. We are giving this very high priority.

TRAINING STANDARDS

7. Senator SULLIVAN. Secretary Spencer and General Neller, "This Kind of War" by T.R. Fehrenbach details the devastating loss of American lives at the start of the Korean War due to a lack of readiness. Would you agree that we must continue to ensure our military training standards are hard and rigorous to reflect the realities of combat, and that they should not be influenced by politics? In your personal opinion, do you think that training standards should be delegated to the service chiefs as directed by section 531 of the Senate-passed Fiscal Year 2018 National Defense Authorization Act?

Secretary SPENCER and General NELLER. Yes, training standards should reflect the realities of combat. For the Marine Corps, a good standard is measureable, able

to be evaluated, and demonstrated during those conditions units will most likely encounter during combat operations such as cold weather, jungle, or littorals. The Secretary of the Navy must retain ultimate responsibility for training of the Marine Corps as required by 10 USC 5013. However, 10 USC 5043 assigns responsibility to the Commandant to transmit plans and recommendations to the SECNAV and to execute when approved. As a practical matter, Navy Regulations have delegated training requirements to the Commandant. Paragraph 0504 charges HQMC (under the direction and control of SECNAV) with training of the Marine Corps. Paragraph 0505.2.a assigns CMC responsibilities "to plan for and determine the needs of the Marine Corps for equipment, weapons, or weapon systems, materials, supplies, facilities, maintenance, and supporting services. This responsibility includes the determination of Marine Corps characteristics of equipment and material to be procured or developed, and the training required to prepare Marine Corps personnel for combat."

QUESTIONS SUBMITTED BY SENATOR DAVID PERDUE

AUDIT

8. Senator PERDUE. General Neller, in 2017 the Marine Corps became the first military service within the Department of Defense to ever undergo a full financial statement audit although you received a disclaimer. In 2013, the Marine Corps came very close to reaching a clean opinion on a limited financial audit. We are gaining momentum in this area and I want to ensure that the Department continues to pursue completing the audit and eventually reaching a clean opinion in every fiscal year. What is the current status of the Marine Corps' fiscal year 2018 audit?

General NELLER. The Marine Corps is currently undergoing the fiscal year 2018 Full Financial Statement audit. We recently completed the Planning Phase of the audit and transitioning to the Internal Control Phase. To date, the Marine Corps has delivered supporting documentation for over 1,080 Provided-by-Client (PBC) requests and responded to a total of 210 follow-up-questions.

We considered the Planning Phase of the audit a success. During this phase, auditors visited 11 locations to include commands located in Okinawa Japan and Camp Lejeune, North Carolina. Auditors also visited supporting establishments located in Cleveland, Columbus, Indianapolis, and Kansas City. This successful planning effort required collaboration across multiple Marine Corps commands, service providers, the Department of Defense Inspector General and the Independent Public Accountant (IPA) Kearney & Company.

In the review of the Marine Corps' financial statements, auditors have started testing the Statement of Budgetary Resources (SBR) and the Balance Sheet. To support the SBR testing efforts, we provided official documentation for sample requests that includes unpaid obligations consisting of 218 sample transactions. During the site visits, auditors performed a thorough analysis of Marine Corps' assets. This includes the Existence and Completeness testing of 2,591 samples transactions related to Garrison Property, Real Property, Military Equipment, Garrison Mobile Equipment and Operating Materials and Supplies (OM&S).

To date, auditors have observed 49 conditions that could potentially result in noted deficiencies. Of the 49 observations, 38 were previously noted during the fiscal year 2017 Full Financial Statement Audit. We worked hard to correct these deficiencies and continue to make notable improvements. The auditors plan to highlight our progress in the correction of these repeat deficiencies during the formal Notification of Findings and Remediation (NFR) process which may reduce their impact and severity. We anticipate this iterative process will continue for years to come as we move toward our goal of obtaining a clean opinion.

9. Senator PERDUE. Admiral Richardson, what is the current status of the Navy fiscal year 2018 Audit?

Admiral RICHARDSON. Navy met the NDAA requirement and commenced a full scope audit in January of 2018. In mid-April, Navy's audit firm sent notification that they intend to issue a "disclaimer of opinion" later this year—meaning that during this year's audit, they cannot gather enough information to form an opinion about the accuracy of the Navy's statements. This is an expected outcome for a first-year audit of a large, complex agency, and of course there are few organizations worldwide which match the size and intricacy of the Military Departments.

Factors which contributed to audit team's conclusions:

- Navy's challenge to account for all of its financial transactions, owing to a complex array of business IT systems and the prevalence of ineffective manual internal controls governing this data's flow.
- Large volumes of accounting adjustments, resulting from weak internal controls—which we are strengthening but many of which are still inadequate—over business processes and IT systems.
- Navy's ability to account for and accurately value its global, diverse asset portfolio—worth hundreds of billions of dollars—because of weak process and system controls.

We are identifying and correcting our deficiencies as quickly as we can. The Navy's senior leaders are relaying this sense of urgency to the rest of the Department, and they recognize that correcting business process and system deficiencies is a Departmental priority. Flag officers or senior executives manage each corrective action plan.

In addition, because the audit team has signaled its intent to disclaim, they no longer are required to gather documentation generated by thousands of Navy business transactions, as they would have done had they continued the audit's course. This brings two beneficial consequences: the auditors can divert their attention from testing and instead help the Navy identify business areas which need the most improvements; and it also relieves operational commands from the resource-intensive task of gathering volumes of documentation to pass to the audit team.

10. Senator PERDUE. General Neller, Admiral Richardson, and Secretary Spencer, on April 17, a former Defense official told the House Armed Services Committee, quote, "If I were the master of the universe, I would give up the audit . . . Five billion dollars over five years, I'd say it's not worth it . . . I would say that we already know . . . the deficiencies we have in our financial systems. We know we have a laundry list of things that need to be fixed—and until we fix them, we're going to continue to fail audits." Do you agree or disagree with these claims?

General NELLER. The Marine Corps believes that the audit is critical to mission readiness and should continue. The transparency afforded with auditable financial statements demonstrates our commitment to responsible full financial statements and 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.

In an effort to reduce the cost of audits to the Department, the Marine Corps understands the importance of forming partnerships with our service providers. The Marine Corps is reviewing our shared processes and systems in an effort to gain efficiencies. Paramount to working with our service providers is ensuring that we have adequately written and agreed upon service level agreements (SLA) in place to ensure the establishment of partnerships with respect to the audit and the remediation of audit findings. We are currently working with our service providers to determine that SLAs are complete and are being periodically reviewed to ensure they accurately reflect the roles and responsibilities for each party.

As a result of fiscal year 2017 audit findings, the Marine Corps was made aware of issues effecting the accounting for property, plant, and equipment. Several key issues were brought to our attention regarding real property to include assets that were not being reported, assets that were reported but belonged to other entities, and assets that were not valued correctly. Similarly, the Independent Public Accountant concluded that the Marine Corps did not properly record the value of ammunition. These conditions can cause a misstatement of the Marine Corps financial statements and are not a true reflection of our financial position. The Marine Corps is dedicated to making corrective actions that include upgrades to systems, formalized operating procedures, and training to ensure that account balances on the financial statements are accurate and can be fully supported by evidential documentation.

Each year we continue to see improvements and gain benefits from the audit. It has provided the Marine Corps with an honest assessment of our organization and processes. Each audit cycle serves as an annual checkup, not unlike an annual physical conducted by a doctor, providing us critical feedback on the health of our operations. Some of our processes require reengineering. For example, we are reviewing our method to record, report and document assets listed on our balance sheet inclusive of Property, Plant and Equipment, and Operating Materials and Supplies. The audit has also identified processes that are operating efficiently which we are leveraging in a road map to assess inefficient processes. Lastly, the Marine Corps will continue to improve our collaboration across the enterprise in regards to our internal controls, internal reviews, and audit support efforts.

Admiral RICHARDSON and Secretary SPENCER. The Department of the Navy is investing in transforming its business operations to comply with accepted accounting principles and audit standards. These changes are necessary to adhere to existing legislation, and the future result will be a favorable audit opinion. Our Department can then better assure the public that appropriated funds are being spent and accounted for as Congress intended.

The framework provided by annual financial statement audits is necessary for a successful business transformation. Audit activity and subsequent findings focus our Department's attention top-to-bottom on the sustained fixes which must be made and give a sense of urgency to the pace of remediation. Without the rigor and discipline required by the audit process, the Defense Department will not be able to readily make the required leap to a "clean" opinion—a hurdle already crossed by every other federal agency.

11. Senator PERDUE. Secretary Spencer, how have your services benefited from undertaking the audit?

Secretary SPENCER. Benefits include:

- *Expanding the sphere of accountability for spending appropriated funds as intended.* End-to-end ownership of each of the DON business processes has been assigned to senior leaders, who report audit remediation progress to the DON Audit Committee. Internal controls governing business processes are being strengthened to bring them in compliance with accepted accounting principles and audit standards. These improved controls will be performed by the tens of thousands of Departmental personnel who spend dollars for goods and services to support warfighters.
- *Ensuring security controls for business information systems are being performed.* Audit procedures include assessing physical security of information systems; ensuring system access lists are updated using a regular, methodical process; and ensuring that user roles performed within the system are properly segregated.
- *Reducing the risk of funds misuse.* Strengthened business internal controls, coupled with a rigorous testing and monitoring program, reduce the risk of unscrupulous or unlawful exploitation.
- *Efficiencies will continue to accrue.* As business controls are strengthened, some processes will become more efficient, and savings and cost avoidance will result. Examples include: one major command was able to re-purpose approximately $50 million annually in current year funds by strengthening its contract close-out controls; a fleet command also increased its buying power in one year by about $50 million through improving its controls over requisition validation and fuel billing.

INTELLIGENCE, SURVEILLANCE, AND RECONNAISSANCE AIRCRAFT & FUTURE THREATS

12. Senator PERDUE. Admiral Richardson and Secretary Spencer, the Navy's P–8 Poseidon is a maritime intelligence, surveillance, and reconnaissance aircraft. Like other aircraft across the services to include the Air Force's Joint Surveillance Target Attack Radar System, it is built on a Boeing civilian aircraft platform. The P–8 has some of the same capabilities and performs similar missions in the maritime domain as the Air Force's JSTARS does over land. The Navy plans on buying more P–8s to bolster its ISR resources in its fiscal year 2019 budget request. Meanwhile, the Air Force plans to divest completely in the JSTARS platform recapitalization and cites that it will not be a viable capability in the future due to survivability concerns in a contested environment. How does the P–8 fit into the Navy's role in the future fight?

Admiral RICHARDSON and Secretary SPENCER. The P–8A's primary mission is broad area Anti-Submarine Warfare (ASW). The P–8A's primary role during major combat operations is to conduct ASW operations in support of Strike Group operations. The P–3C Orion, which retires in 2020, and the P–8A are the only fixed-wing, long range platforms capable of performing this ASW mission set.

Secondary missions for the P–8A include Anti-Surface Warfare (ASuW) and Intelligence, Surveillance, and Reconnaissance (ISR) missions. As an ISR asset, the P–8A has a robust systems suite and the longest range and endurance of any manned airborne ISR platform. The P–8A ISR systems suite includes a radar capable of surface search, inverse synthetic aperture radar (ISAR), and synthetic aperture radar (SAR), an electro-optical and infrared (EO/IR) high definition camera, and an electronic support measures (ESM) system capable of detecting, locating, and identifying threat emissions from long range. Additionally, the P–8A is capable of carrying the Advanced Airborne Sensor (AAS) active electronically scanned array radar. On-

board systems automatically correlate data from many sensors, synthesize this information, and provide input to national and regional intelligence databases. When used in conjunction with other fleet and joint assets, the P–8A Poseidon expands the reach and lethality of our military forces in the current and future fight.

The P–8A is not designed to perform JSTARS airborne battle management missions or participate in the high-end air-to-air battle. Like most large profile, non-radar evading aircraft, the P–8A has a considerable radar cross section and it presents a large target for radar guided missiles. As our adversaries and near-peer competitors develop longer range surface-to-air and air-to-air missiles, the Navy continues to study and evaluate radar counter-measure systems to provide onboard protection for the P–8A. When dictated by mission location and increased threat levels, P–8A can be supported by Strike Group or theater fighter escorts to perform their primary mission. Through use of advanced long range stand-off sensors, netted C4I systems, and well-developed Strike Group procedures, the P–8A will remain aware of threats and will operate away from the high-end air fight.

13. Senator PERDUE. Admiral Richardson and Secretary Spencer, what are your concerns about the survivability of the P–8?

Admiral RICHARDSON and Secretary SPENCER. The P–8A's primary mission is broad area Anti-Submarine Warfare (ASW). The P–8A's primary role during major combat operations is to conduct ASW operations in support of Strike Group operations. The P–3C Orion, which retires in 2020, and the P–8A are the only fixed-wing, long range platforms capable of performing this ASW mission set. Secondary missions for the P–8A include Anti-Surface Warfare (ASuW) and Intelligence, Surveillance, and Reconnaissance (ISR) missions. As an ISR asset, the P–8A has a robust systems suite and the longest range and endurance of any manned airborne ISR platform. The P–8A ISR systems suite includes a radar capable of surface search, inverse synthetic aperture radar (ISAR), and synthetic aperture radar (SAR), an electro-optical and infrared (EO/IR) high definition camera, and an electronic support measures (ESM) system capable of detecting, locating, and identifying threat emissions from long range. Additionally, the P–8A is capable of carrying the Advanced Airborne Sensor (AAS) active electronically scanned array radar. Onboard systems automatically correlate data from many sensors, synthesize this information, and provide input to national and regional intelligence databases. When used in conjunction with other fleet and joint assets, the P–8A Poseidon expands the reach and lethality of our military forces in the current and future fight. The P–8A is not designed to perform JSTARS airborne battle management missions or participate in the high-end air-to-air battle. Like most large profile, non-radar evading aircraft, the P–8A has a considerable radar cross section and it presents a large target for radar guided missiles. As our adversaries and near-peer competitors develop longer range surface-to-air and air-to-air missiles, the Navy continues to study and evaluate radar counter-measure systems to provide onboard protection for the P–8A. When dictated by mission location and increased threat levels, P–8A can be supported by Strike Group or theater fighter escorts to perform their primary mission. Through use of advanced long range stand-off sensors, netted C4I systems, and well-developed Strike Group procedures, the P–8A will remain aware of threats and will operate away from the high-end air fight.

14. Senator PERDUE. Admiral Richardson and Secretary Spencer, why will the P–8 continue to be a valuable ISR asset to the Navy?

Admiral RICHARDSON and Secretary SPENCER. The P–8A's primary mission is broad area Anti-Submarine Warfare (ASW). The P–8A's primary role during major combat operations is to conduct ASW operations in support of Strike Group operations. The P–3C Orion, which retires in 2020, and the P–8A are the only fixed-wing, long range platforms capable of performing this ASW mission set.

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CONCERNS REGARDING HYPERSONIC THREATS

15. Senator PERDUE. General Neller and Admiral Richardson, in an Emerging Threats Subcommittee hearing, we heard from Dr. Griffin, the Under Secretary for Research and Engineering about some alarming developments. Dr. Griffin told us that China has fielded, or is close to fielding, hypersonic delivery systems for conventional prompt strike that can reach out thousands of kilometers from the Chinese shore and hold our carrier battlegroups or our forward deployed forces on land that we have based in the region. Equally troubling, DARPA, which has done some of the most significant work on hyper-sonics in the nation, has only one wind tunnel that they can use for hypersonic research. What are your concerns regarding the growing threat from China and Russia on hyper-sonics to hold your forward deployed forces or your carrier battlegroups at risk?

General NELLER. This spring, the Secretary of Defense directed the Joint Staff to conduct a competitive area study of all five battle domains in order to address threats in each domain. This study takes into consideration the National Defense Strategy and the Defense Planning Guidance. The Marine Corps is actively engaged in this joint study. This combined effort includes working with the Strategic Capabilities Office, DARPA, and with industry to examine how we can improve the capabilities we have and develop future capabilities to detect, track, and defeat hypersonic threats. Further, we recognize that we must both defend against hypersonic threats, as well as, pursue hypersonic offensive capabilities to counter land and sea-based threats. These on-going efforts can be addressed in a classified setting at your convenience.

Admiral RICHARDSON. Navy is focused on the hypersonic problem. Because of their long range and high speed, these weapons can deny access to vital areas of operation, diminish our ability to exert influence, and endanger our forces in theater. Navy has been working closely with the Missile Defense Agency (MDA)[1] for the past two years to assess and perfect our ability to detect, track, and engage these difficult threats. The Navy works collaboratively with the Air Force, DARPA, MDA, Conventional Prompt Strike (CPS) Office, and NASA on hypersonic research and leverages the advances to apply to Navy and Marine Corps warfighting needs. We are giving this project highest priority because of the seriousness of the hypersonic threat, and the offensive opportunities hypersonic weapons provide.

More details can be provided in a classified setting.

16. Senator PERDUE. General Neller and Admiral Richardson, how are you working to defeat and defend against the hypersonic threat?

General NELLER. We recognize that we must both defend against hypersonic threats, as well as, pursue hypersonic offensive capabilities to counter land and sea-based threats. These on-going efforts can be addressed in a classified setting at your convenience.

Admiral RICHARDSON. Navy is focused on the hypersonic problem. Because of their long range and high speed, these weapons can deny access to vital areas of operation, diminish our ability to exert influence, and endanger our forces in theater. Navy has been working closely with the Missile Defense Agency (MDA)[1] for the past two years to assess and perfect our ability to detect, track, and engage these difficult threats. The Navy works collaboratively with the Air Force, DARPA, MDA, Conventional Prompt Strike (CPS) Office, and NASA on hypersonic research and leverages the advances to apply to Navy and Marine Corps warfighting needs. We are giving this project highest priority because of the seriousness of the hypersonic threat, and the offensive opportunities hypersonic weapons provide.

[1] In accordance with Section 1687 of Public Law 114–328, National Defense Authorization Act for Fiscal Year 2017, which designates the MDA Director as Executive Agent for development of Hypersonic Defense (HD), MDA, working with the Services and Defense Agencies, is developing defensive architectures from detection to intercept.

More details can be provided in a classified setting.

CYBER

17. Senator PERDUE. General Neller, I understand the Marine Corps has created a cyber military occupational specialty with enlisted positions and offensive and defensive officer roles. Will Marines in these cyber MOS's rotate into non-cyber related jobs or will they primarily be able to remain in the cyber field?

General NELLER. The Marine Corps traditionally fences off its new investments to assure mission success. Every Marine seeks personal and professional satisfaction.

Our specialists in cyber are no different; they are first and foremost Marines. "We will make them as we make all other Marines, deliberately and with due consideration for our investment in human capital."

Wisdom dictates that we apply the best Marine into the most appropriate fit. We anticipate many of these Marines will be thrust into the throes of cyber operations and be fully occupied from day one of their careers. We continue to plan for cases where some marines may pursue additional challenges such as Drill Instructor, Marine Security Guard or Recruiting Duty, but they will be exceptional instances.

There are cross-functional advantages to be had and the Marine Corps is not limiting itself in this new endeavor. We are excited at the road which lies ahead and our marines are chomping at the bit. It is gratifying to see Marines from all walks of life and more than two dozen different occupational fields seek lateral entry into Occupational Field 17.

18. Senator PERDUE. General Neller, what will be the career progression of Marines in the cyber MOS's?

General NELLER. Our Cyber Marines will cut their teeth in the Marine Expeditionary Forces Information Groups. After Boot Camp and initial schooling they will learn the role of the network defender, protecting those deployed furthest from the shield. This will ensure that Cyber Marines operating at the tactical edge understand the integrated nature of the Marine Air Ground Task Force and can master effects in cyberspace. Proficiency with the tools of the trade and familiarity with the operational tactics, techniques and procedures that prevail in amphibious environments keep us grounded, focused on the Navy-Marine team in every domain of warfare.

As those marines gain experience and expertise, we anticipate they will advance as Non-Commissioned Officers into the ranks of the Cyber Mission Forces. The diversity of missions will lead to a well-rounded and enthusiastic cadre of Staff Non-Commissioned Officers who can then specialize into the restricted officer ranks where they might grow into Chief Warrant Officers and Limited Duty Officers. Or perhaps even pursue commissions as 1702 Cyberspace Operations Officers.

Marines coming from the cyber forces will naturally align to positions of greater responsibility where their operational savvy and technical acumen raise them to advise our Marine Expeditionary Forces and Marine Corps Forces worldwide. Our aim is to establish a virtuous rotation where Marine leadership is the first lesson learned and placed into practice to guide fulfilling careers.

MARINE CORPS LOGISTICS BASE—ALBANY

19. Senator PERDUE. General Neller, as you know, Marine Corps Logistics Base Albany suffered hundreds of millions of dollars in damage to equipment and facilities in the 2017 tornados. Could you give the total dollar amount of that damage?

General NELLER.

- Funding for Equipment Repairs (Mar 18)
  - Fiscal year 2017: $7.8 million in expenditures approved by HQMC
  - Fiscal year 2018: LOGCOM expects to receive $61.2 million ISO of storm regeneration
  - Fiscal year 2019: $61.2 million programmed, controls currently reflect $52.0 million, a reduction of $9.2 million
  - Fiscal year 2020: $106.7 million programmed, controls currently reflect $103.8 million, a reduction of $2.9 million
- Total facilities related costs for clean-up, emergency repairs and permanent repairs and construction = $208 million
  - Fiscal year 2017—$88 million (MC O&M) funded and contracted for facility repairs

- Fiscal year 2017—$15 million (DLA WCF) funded and contracted for facility repairs
- Fiscal year 2018—$16 million (MC O&M) approved in the straddle program for facility repairs
- Fiscal year 2018—$43 million (MILCON) funded for replacement warehouse
- Fiscal year 2020/21—$46 million (MILCON) requested for a 2nd replacement warehouse (not approved)

20. Senator PERDUE. General Neller, what is the status of the recovery and repair of Albany?

General NELLER.

- Equipment
  - Equipment storm regeneration LTIs is 73 percent complete (4 May 18)
  - Of the 47,390 Principle End Item requirement:
  - 34,681 have been completed
  - 12,709 require Limited Technical Inspection (LTI)
- Sixty-four facilities damaged and in various stages of disrepair
  - All forestry related clean-up and replanting is complete
  - Twenty facilities repairs are complete
  - Fourty-four facilities repairs are underway
  - Sixty-five percent of the overall repair work is completed
  - On track to award the final $16 million in O&M funded repairs NLT 30 June 18
  - The first MILCON project (P977 200,000SF Climate Controlled Combat Vehicle Warehouse) is in the pre-award phase and is on track to be awarded by NAVFAC before 31 Dec 2018.

21. Senator PERDUE. General Neller, what was the impact of Congress's inability to pass the 2018 budget on time to the recovery efforts in Albany?

General NELLER. No reportable impacts based on the CR specifically to storm recovery.

USE OF DEFENSE LOGISTICS AGENCY FOR SERVICES

22. Senator PERDUE. Admiral Richardson, the military services have, to varying degrees, transferred retail supply, storage, and distribution functions at their depot-level industrial sites to the Defense Logistics Agency (DLA) and achieved some efficiencies. Specifically, Air Force Air Logistics Complexes (ALC) and Navy Fleet Readiness Centers (FRC) transferred all retail supply, storage, and distribution functions to DLA over the course of several years, which has led to a number of benefits, including a 20 percent reduction in on-hand inventory and a 10 percent reduction in backorders at the Air Force ALCs over a 5-year period. By contrast, the Army and Marine Corps have retained most supply functions at their depots and DLA manages inventory at the Navy shipyards while still using Navy systems and processes, rather than those of DLA. What steps are the Navy pursuing in collaboration with DLA to improve the efficiency and effectiveness of retail supply, storage, and distribution functions at the depots and shipyards?

Admiral RICHARDSON. The Navy's transfer of SS&D functions within the depots and shipyards to DLA have been completed. The Navy and DLA continue to finalize a Strategic Memorandum of Agreement (SMOA) to align the command and control structure within the shipyard to improve the efficiency and effectiveness of supply support functions executed by both DLA and Navy.

23. Senator PERDUE. General Neller, why has the Marine Corps been reluctant to transfer aspects of the noted functions to DLA and are there plans/efforts underway to do so?

General NELLER. MARCORLOGCOM transferred depot-level industrial retail storage and distribution functions to the Defense Logistics Agency (DLA) in 2009. In Q1 of fiscal year 2018, MARCORLOGCOM launched a study to develop a Business Case Analysis (BCA) that would provide an objective, third-party perspective on the merits of transferring the depot-level industrial "Supply" functions to DLA. Based on the results of the BCA, LOGCOM intends to move forward with transferring industrial supply functions to DLA in order to gain additional efficiencies in support of depot-level maintenance.

QUESTIONS SUBMITTED BY SENATOR CLAIRE MCCASKILL

UPGRADES TO E/A 18G GROWLER

24. Senator MCCASKILL. Secretary Spencer, I understand that the Navy plans to request upgrades for Tactical Targeting Network Technology, Engine Enhancements, and Reactive Electronic Attack Measures for the E/A–18G Growlers, but the current plan begins funding in fiscal year 2020. What benefits will exist for the Navy and warfighter if these capabilities were funded earlier?

Secretary SPENCER. The President's Fiscal Year 2019 Budget (PB19) reflects the best balance of warfighting requirements given available resources. If additional funds are made available, the Navy's Fiscal Year 2019 Unfunded Priorities List (UPL) includes requests to accelerate recovery from capacity and capability risk that has accumulated in Naval aviation. The list includes: Tactical Targeting Network Technology (TTNT); F/A–18E/F Super Hornet engine enhancements; and EA–18G Reactive Electronic Attack Measures (REAM) Cognitive Electronic Warfare (EW). Tactical Targeting Network Technology (TTNT): Additional fiscal year 2019 funding accelerates TTNT System Design and Development, accelerating platform integration for the E–2D, EA–18G and F/A–18E/F to achieve an Initial Operational Capability (IOC) of 2021. Engine Enhancements: Additional fiscal year 2019 funding accelerates timelines by 1 year. Reactive Electronic Attack Measures (REAM) Cognitive EW for the E/A–18G Growlers: Additional fiscal year 2019 funding accelerates timelines by 1 year.

QUESTIONS SUBMITTED BY SENATOR RICHARD BLUMENTHAL

SUBMARINE MAINTENANCE

25. Senator BLUMENTHAL. Secretary Spencer, through last year's NDAA, I required the Navy to submit a report on how they plan to address this maintenance backlog. The report delivered in February stated, "The Navy intends to execute all the workload programmed at the Naval Ship Yards, with no availabilities moving from the public to the private sector." Just last month at a HASC hearing and this month before this committee, you acknowledged that private yards will be more involved with maintenance. As we are receiving mixed messaging, can you please provide more clarity on how you plan to proceed?

Secretary SPENCER. The Navy intends to continue to utilize the entire industrial base as it annually assesses future workload requirements and seeks to mitigate workload peaks within any given year. As such, consideration will be given to balancing the workload across the public and private sectors to support future maintenance and modernization requirements, as well as supporting the growth of the private sector workforce to prepare for the new construction of future ship classes.

26. Senator BLUMENTHAL. Secretary Spencer and Admiral Richardson, does the *Columbia*-class Program remain the Navy's top priority program? Do you agree we must do everything to ensure it remains on track? As such, do you agree that ensuring a healthy workforce in the yards building this program is in the Navy's best interests? Will you commit to reviewing the feasibility of shifting a small number of near-term, backlogged maintenance availabilities to the private yards to help smooth out this workload valley?

Secretary SPENCER and Admiral RICHARDSON. *Columbia* is the Navy's top acquisition program. The Navy is committed to taking all necessary actions to ensure the fulfillment of U.S. STRATCOM requirements as it balances other priorities within the enterprise. Ensuring a healthy and capable private sector workforce is critical to satisfying this commitment. As such, consideration will be given to balancing the workload across the public and private sectors, including shifting backlogged submarine maintenance availabilities to the private yards to support the growth of the private sector workforce to prepare for the new construction of future ship classes.

COLUMBIA-CLASS AND SUBMARINE INDUSTRIAL BASE

27. Senator BLUMENTHAL. Secretary Spencer and Admiral Richardson, I spoke with STRATCOM Commander General Hyten last month on the importance of the defense industrial base for the *Columbia*-class. He said, "the shipyards are a critical national asset to America. It's one of our strengths, and that workforce is essential to us being able to build *Columbia,* to be able to build *Virginia.* And I think it's the responsibility of all of us, including the Federal Government, to make sure that that workforce—which is a strategic asset—is supported across the board." He went

on to say, "Every worker that's at a shipyard that is working on the *Columbia* is part of our national security infrastructure." Do you agree with General Hyten?

Secretary SPENCER and Admiral RICHARDSON. Yes. A skilled shipyard workforce is critical to the infrastructure that produces the Navy's submarines, carriers, and other combatant ships that are vital to national security. With respect to the shipbuilding industrial base supporting our submarine and carrier construction, the Navy is actively engaged with the shipbuilders to ensure the right skillsets and capacity are available as the nation ramps up production.

28. Senator BLUMENTHAL. Secretary Spencer and Admiral Richardson, would you support increased advance procurement funding to add capacity and capability to prepare the industrial base for a substantial increase in work?

Secretary SPENCER and Admiral RICHARDSON. The Navy appreciates the additional $225 million Advance Procurement (AP) funding added by Congress in the fiscal year 2018 appropriations bill for the *Virginia*-class submarine program, specifically for industrial base expansion. This additional funding will be used to improve the supplier base's ability to support future submarine construction demand. Investments in 2018 in supplier base risk reduction will begin to address specific and validated facility, skilled labor, and machinery shortfalls. AP funding helps the industrial base prepare for increased work. Additional funding reduces the schedule risk for the *Columbia*-class construction along with the *Virginia*-class construction, and supports facility investments, workforce increases, vendor equipment decisions, and workload leveling.

The Navy is continuously looking for ways to reduce the risk to *Columbia*-class procurement while also balancing these investments against other Navy priorities.

29. Senator BLUMENTHAL. Secretary Spencer and Admiral Richardson, do you agree that worker training grants provided by the Federal Government play an important role in supporting the defense industrial base, and therefore DOD? Do you think we should increase funding that helps train workers that build our systems?

Secretary SPENCER and Admiral RICHARDSON. Yes, the worker training grants (such as the U.S. Department of Labor Sector Partnership National Emergency Grant and U.S. Department of Labor Workforce Innovation Fund) play an important role and have directly benefitted the defense industrial base. Grants such as these have resulted in the support of the hiring needs and the critical competencies required by the defense industrial base. The Navy is projecting a significant workload increase across the entire shipbuilding industry, especially in the submarine industrial base with the addition of the *Columbia*-class. This increase in work will require training and hiring outside of the current shipbuilding industry, and these grants help to ensure there are enough people with the right skills available in the right places to support the Navy's shipbuilding plan. An increase in funding to these programs would be beneficial to the Navy and its partners.

FISCAL YEAR 2019 SHIPBUILDING PLAN

30. Senator BLUMENTHAL. Secretary Spencer and Admiral Richardson, the Fiscal Year 2019 30–Year Shipbuilding Plan considers adding three *Virginias* per year in a dozen of the out years—with the nearest possibilities being fiscal years 2022, 2023, 2025—to reach the required 66 attack submarines sooner than the late 2040s. How can Congress best support you in this goal to further accelerate production?

Secretary SPENCER and Admiral RICHARDSON. The 30-year shipbuilding plan, and the Navy's fiscal year (FY) 2019 submission establishes an acquisition profile that grows the force at a sustainable, affordable rate while protecting the overall balanced warfighting investment strategy. Should additional funding become available to pursue a more aggressive acquisition strategy, principally to reach 66 attack submarines sooner than the late 2040s, the Government will need to commit as early as possible to building additional *Virginia*-class Submarines to support facility/fixture additions, workforce increases, and vendor equipment manufacturing decisions. An early commitment in the form of three-year Advance Procurement (AP) funding in fiscal year 2019 and funding for additional fixtures is required as detailed below.

1. Three-year AP for the Nuclear Industrial Base (NIB) is required to support the additional submarines in fiscal year 2022 and fiscal year 2023 and then in fiscal year 2025 (outside the Future Years Defense Program (FYDP)). Given the current capacity of the NIB and manufacturing lead time associated with nuclear propulsion plant equipment, the ability to provide funding three years prior to authorization is critical to the efficient construction of these submarines.

2. Three-year AP for contractor furnished equipment is also required to support the additional submarines in fiscal year 2022, fiscal year 2023 and fiscal year 2025. This funding would be used to procure critical parts in advance thereby reducing risk to manufacturing. Additionally, to further reduce the risk to the fiscal year 2022, fiscal year 2023 and fiscal year 2025 ships, the Navy would accelerate its AP buys—what would traditionally be purchased with two-year and one-year AP would now be purchased with three-year AP and two-year AP respectively—to purchase items such as *Virginia* Payload Module tube components, air conditioning plants, and other critical path items. Procuring material via three-year AP has the added benefit of allowing for more efficient production without the need to facilitize to support a short-term increase to three-per-year production.
3. Fourty-six million dollars in direct facilities funding is necessary in fiscal year 2019 to allow for additional fixtures (tube insertion and tube pairing) required for the increase in production. Other funding for acceleration of or additional facilities will be addressed through contract incentives.
4. Comparable amount of economic order quantity (EOQ) funding is included early in the Block V for the third ships in fiscal year 2022 and fiscal year 2023 and in Block VI for the third ship in fiscal year 2025.

Additionally, within projected Navy top line in the FYDP, without a commitment to provide the funding for the additional ships during the construction of the *Columbia*-class SSBN, Navy will be forced to reduce funding for other necessary procurement programs.

31. Senator BLUMENTHAL. Secretary Spencer and Admiral Richardson, what changes or planning is required for the near-term additions in fiscal years 2022, 2023, 2025? Do you believe you are ready to meet this challenge?

Secretary SPENCER and Admiral RICHARDSON. The Navy is ready to meet the challenge, but lacks the funding to do so. The 30-year shipbuilding plan, and the President's Fiscal Year 2019 Budget submission establishes an acquisition profile that grows the force at a sustainable, affordable rate while protecting the overall balanced warfighting investment strategy. Within the projected Navy top line in the Future Years Defense Program, without a commitment to provide the funding for the additional *Virginia*-class Submarines (VCS) during the construction of the *Columbia*-class SSBN, Navy will be forced to reduce funding for other necessary procurement programs.

The near term need is three-year advance procurement and economic order quantity funding of $1 billion in fiscal year 2019 for additional VCS in the fiscal year 2022 and 2023.

In addition to supporting additional funding requirements for VCS in fiscal year 2022, 2023 and 2025, facility additions and upgrades, beyond sustained two VCS per year requirements, are necessary across General Dynamics Electric Boat and Huntington Ingalls Industries—Newport News Shipbuilding manufacturing, outfitting, and final assembly and test facilities. These facilities requirements reflect the increased pace and capacity needed to support all stages of construction. The shipbuilders would require acceleration of their current facilities master plans as well as new facilities and fixtures. As the VCS program has used a Capital Expenditure (CAPEX) provision in prior Multi-Year Procurement (MYP) contracts to encourage facility investment, the Block V MYP (and Block VI, as necessary) contract will contain a similar CAPEX/Construction Readiness provision to incentivize executing the accelerated, increased facilities footprint. Therefore, there is minimal direct funding associated with fixtures as the majority of the facilities changes would be incentivized through CAPEX provisions and would come from each ship's funding.

Executing the increased VCS production, while not impacting the stated priority of *Columbia* on-time delivery, will likely result in increased construction spans for all VCSs in the three per year build years. It is expected that shipbuilder facility additions, additional labor resources, and efforts to shorten construction cadences will serve to mitigate construction span increases to some degree.

SUBMARINE STRIKE CAPACITY

32. Senator BLUMENTHAL. Secretary Spencer and Admiral Richardson, what can you tell us about the Navy's desire to continue building additional *Columbia*-class submarines beyond the 12 boats to be completed in the 2030s?

Secretary SPENCER and Admiral RICHARDSON. The Navy the Nation Needs (NNN) strategy is sized to ensure a minimum of 10 operational SSBNs are available. This force structure is based on force survivability. A minimum force of 12 total *Columbia* SSBNs ensures that the nation has at least 10 operational SSBNs to accommo-

date the ship's planned mid-life overhaul. The Navy could potentially procure additional *Columbia*-class SSBNs or similar platforms if necessitated by changes in the strategic environment.

ISR CAPABILITIES IN THE PACIFIC

33. Senator BLUMENTHAL. Secretary Spencer and Admiral Richardson, in PACOM Commander Admiral Harris' recent statement to this Committee before PACOM's posture hearing he stated, "the challenge of gathering credible, deep, and penetrating intelligence cannot be overstated. The Indo-Pacific presents a dynamic security environment requiring persistent and intrusive ISR to provide indications, warning and situational awareness across a vast geographic area . . . The rapid modernization of our peer competitors requires additional advancements in how our intelligence is collected and processed, including the associated risks. Our ISR capabilities must be suited to our unique operating environment." Do you believe the Navy possesses the ISR capabilities to accomplish its missions in the Pacific?

Secretary SPENCER and Admiral RICHARDSON. ISR Capabilities are in very high demand across the globe, including the Indo-Pacific. The Indo-Pacific operating environment presents a dynamic set of challenges. To address these challenges, Navy has taken steps to field capabilities that are agile, resilient, persistent, and networked ensuring all Naval and Combatant Commander (CCMD) requirements are met. The Maritime Intelligence, Surveillance, Reconnaissance & Targeting (MISR&T) capabilities fielded by the Navy are integral to achieving a more lethal, agile, and responsive Naval Force.

The initiatives included in the Navy's Fiscal Year (FY) 2019 budget submission advance the ability to operate effectively in all warfare domains. Fiscal year 2019 programmatic adjustments represent the best balance of cost effective capabilities necessary to meet challenges in the Pacific and around the world. The following programs highlight a few of the key initiatives Navy is taking to improve capabilities:

- The Navy is pursuing Integrated Undersea Surveillance System (IUSS) recapitalization that supports Combatant Command and Fleet requirements and partner nation agreements in the Pacific. This effort includes consideration of a replacement for the Navy's aging cable repair ship and a mix of mobile and deployable sensor systems to provide flexible coverage against shifting current and future threats across large areas of ocean. Navy also funds research and development designed to improve our ability to detect and classify submarines in large expanses of ocean.
- The Navy has funded design and procurement of the Surveillance Towed Array Senor System (SURTASS) T–AGOS replacement, all five of which are currently stationed in the Pacific Area of Responsibility. The seven new T–AGOS vessels are expected to be more capable than the current vessels and more responsive to fleet operational needs. Construction of is scheduled to begin in fiscal year 2022. Navy is also investigating the options for an Expeditionary SURTASS capability which will allow rapid fielding on vessels capable of hosting the system.
- The MQ–4C Triton Unmanned Aerial System (UAS) will provide the Fleet and CCMD with a persistent, robust, and agile network of sensors to provide indications and warnings (I&W) and situational awareness across vast geographic areas like the Pacific. Triton's high-altitude, long-endurance, and advanced maritime sensors provide capability in high-density sea-lanes, littorals, and areas of national interest. When fully operational, Triton will provide near worldwide coverage through a network of five orbits. Triton will field in a baseline configuration in fiscal year 2018, with an Advanced Radar system, Automatic Identification System, Electronic Support Measures, Link-16, and Common Data Link. Baseline capability will be replaced in fiscal year 2021, by a multiple intelligence (multi-INT) configuration which adds additional SIGINT apertures. Throughout the lifecycle of the MQ–4C Triton system, the Navy will implement phased capability upgrades to outpace the evolving threat, to better adapt to near-peer competitors.
- As part of the Distributed Maritime Operations Concept, Navy is integrating the Government owned Minotaur geo-fusion engine across the fleet. Minotaur provides a platform agnostic decision superiority tool which allows for single and multi-platform cueing, collection, detection, classification and identification which bring the ability to better network all Navy assets. Minotaur is already resident on the Navy's EP–3E ISR aircraft and planning is in progress for future integration across all air, surface, and subsurface platforms.

The Navy also leverages National Technical Means (NTM) to support persistent wide-area ocean surveillance as well as naval intelligence functions such as: I&W,

current operational intelligence, intelligence preparation of the operational environment, intelligence assessment, and security. NTM capabilities also feed all-source intelligence analysis to inform Navy warfighting decisions, planning, and actions at the strategic, operational, and tactical levels of warfare.

34. Senator BLUMENTHAL. Secretary Spencer and Admiral Richardson, what options are you considering to improve ISR capabilities in the Navy; specifically, those suited for the vast expanse of the Pacific?

Secretary SPENCER and Admiral RICHARDSON. The Navy plans, develops, and deploys Maritime Intelligence, Surveillance, Reconnaissance & Targeting (MISR&T) capabilities and capacity to satisfy Combatant Command requirements. The MISR&T capabilities funded by the Navy are integral to achieving a more lethal, agile, and responsive Naval Force. Navy continues to leverage our service partners and the intelligence community to ensure full spectrum Battlespace Awareness is available in the Pacific during all phases of warfare.

The initiatives included in the Navy's Fiscal Year (FY) 2019 budget submission advance our ability to operate effectively in all warfare domains. Fiscal year 2019 programmatic adjustments represent the best balance of cost effective capabilities necessary to meet and defeat challenges in the Pacific and around the world. The following programs highlight a few of the key initiatives Navy is taking to improve capabilities:

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The Navy also leverages National Technical Means (NTM) to support persistent wide-area ocean surveillance as well as naval intelligence functions such as: I&W, current operational intelligence, intelligence preparation of the operational environment, intelligence assessment, and security. NTM capabilities also feed all-source intelligence analysis to inform Navy warfighting decisions, planning, and actions at the strategic, operational, and tactical levels of warfare.

NAVY ROTARY WING AIRCRAFT REPORT

35. Senator BLUMENTHAL. Secretary Spencer, last year's NDAA included a reporting requirement that directed you to submit a report that describes and assesses production of anti-submarine warfare helicopters and search and rescue helicopters in support of the 355-ship Navy; however, the letter you provided to this Committee merits further consideration. Does the current rotary wing aircraft inventory meet the needs of a 355-ship Navy—regardless of the mix?

Secretary SPENCER. In accordance with House Report 115–219, accompanying the Department of Defense Appropriations Bill for Fiscal Year 2018, the Navy recently completed a Force Structure Assessment and force level study for its helicopter fleet. This assessment and ensuing Report to Congress, which we are providing to the Congressional Committees under separate cover, assessed the increasing capacity requirements for MH–60R/S aircraft as ship inventories grow to achieve the Navy's 355-ship objective outlined in the 30-year shipbuilding plan. This report concluded that, assuming current deployment ratios and aircraft-support requirements for the Navy's surface fleet remain as they are today, the Navy's inventory of MH–60 helicopters is sufficient to meet demands until the early 2030's, though some modest service-life extension measures may be required. However, a gradual increase in the surface ship inventory is expected to create demand that will eventually exceed current inventory. The report concluded that the Navy will require adjustments in rotary wing aircraft inventory, principally the MH–60R, in order to meet this demand. The MH–60R capacity requirement is driven primarily by the number of Carrier Air Wings, Large Surface Combatants, Small Surface Combatants, and their requisite air wing and helicopter detachment compositions. Options to achieve the increased capacity requirements include procurement of Future Vertical Lift (FVL). The Navy is participating in the Army-led, FVL effort. FVL will address concerns about the increasing demand signal while accounting for service life of existing MH–60R/S aircraft. FVL will phase in modern, state-of-the-art manned and unmanned air vehicles that will meet all of the Navy's future warfighting needs both in terms of capability and capacity. Other options include Service Life Extension Program (SLEP) for MH–60R/S, continued minimum sustaining rate procurement of MH–60R, and combinations of FVL, SLEP, and continued MH–60R procurement.

36. Senator BLUMENTHAL. Secretary Spencer, on the 40 aircraft you mention that are to be put in storage for future use, is there a current plan for them? Will they be used as spares?

Secretary SPENCER. Those aircraft will eventually be returned to the active inventory as demand increases. In the interim, the storage/preservation of aircraft—to include the nearly 40 that are in storage today—will be used to manage flight-hour expenditures on our high-hour airframes.

37. Senator BLUMENTHAL. Secretary Spencer, the letter mentions, "the Navy will also employ modernization efforts, mid-life upgrades, and service life extension programs as needed to meet unforeseen variations in inventory demand." Is the Navy considering moving away from a service life extension program for the MH–60 fleet?

Secretary SPENCER. The cost and scope of service-life extensions needs to be balanced against available resources and competing priorities. It is likely the production timeline of follow-on Future Vertical Lift will necessitate some sort of limited MH–60 extension program.

38. Senator BLUMENTHAL. Secretary Spencer, the mid-life upgrades you reference in your letter have not yet been budgeted for the MH–60 fleet. If the Navy is going to conduct a service life extension program for the MH–60 fleet, should it also plan for a mid-life upgrade?

Secretary SPENCER. The fiscal year 2019 President's Budget request includes limited funding in the PE 0604216N budget exhibit (R–1 Line #108) to commence mid-life upgrade capability studies. The results of these studies coupled with the timeline for production of Future Vertical Lift, will drive requirements for a mid-life upgrade.

QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

NAVY ROTC

39. Senator HIRONO. Secretary Spencer and Admiral Richardson, the University of Hawaii provides an ideal location for the establishment of a Navy ROTC unit, given its close proximity to the Pacific theater and excellent educational programs.

Senior Navy leadership have promoted the idea of bringing Navy ROTC to the University of Hawaii due to the strong Naval presence in the state, the university's diverse pool of talented students and because the nearest Naval ROTC detachment is at least 2,500 miles away in California. The University of Hawaii has been home to Army and Air Force ROTC programs which have produced excellent officers for many decades. If you agree with the rationale I just described, will you work with me to help make Navy ROTC at the University of Hawaii a reality?

Secretary SPENCER and Admiral RICHARDSON. We agree that University of Hawaii has high potential as a NROTC unit, and we look forward to working with you on making it a reality. Given our program's current excess capacity, it would be essential to disestablish some under-performing units to better align capacity with the true officer commissioning requirement, and to serve as a funding offset for consideration of any new units. Toward that end, we would request your assistance with gaining statutory relief from the prohibition in recent Department of Defense Appropriations Acts against planning for and executing Senior ROTC unit disestablishments as a path for establishing a new unit at the University of Hawaii.

AVIATION MISHAPS

40. Senator HIRONO. Admiral Richardson and General Neller, in 2017 the Navy and Marine Corps combined had 20 Class A aviation mishaps, which was the worst year for the Marine Corps since 2004. Already there have been several Class A mishaps in 2018 as well, including several fatalities. This tragic loss of life and significant damage to aircraft comes on top of significant issues with Physiological Episodes in tactical aircraft. While each mishap is unique and requires its own investigation into root causes, I hope that both services are looking deeply to find trends that apply across all Naval Aviation. Have any trends or causal factors common to these incidents been identified at this time?

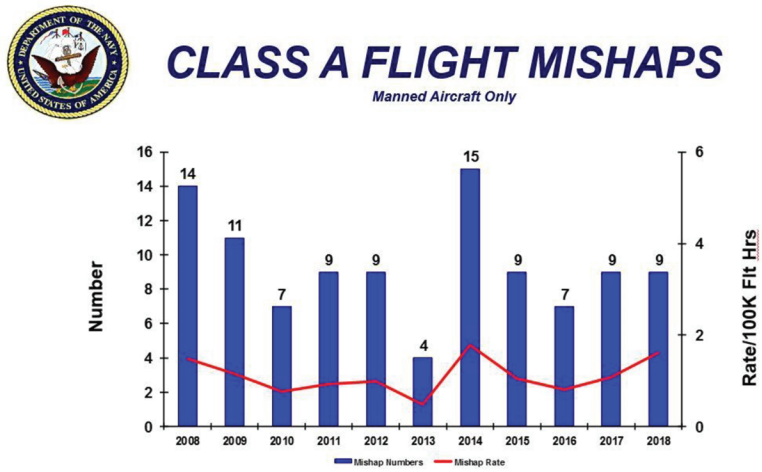
Admiral RICHARDSON. Mishaps can be characterized which allows for a year-to-year comparison. The characterizations typically include: aircrew human factors, maintenance human factors, facilities human factors, and material failure (including bird-strike mishaps). Especially in cases where investigations are immature or the aircraft has not been salvaged, "unknown" is the only possible characterization. In some cases, two or more characterizations are assigned to a mishap (e.g. material failure followed by aircrew human factors).

In fiscal year 2017 Naval Aviation experienced 19 Class A Flight Mishaps (One mishap was recently downgraded to a Class B). The initial analysis of those mishaps shows, 14 had an aircrew human factors component, one had a maintenance human factors component, two had a facilities human factors component, two have a material failure component, and one is unknown.

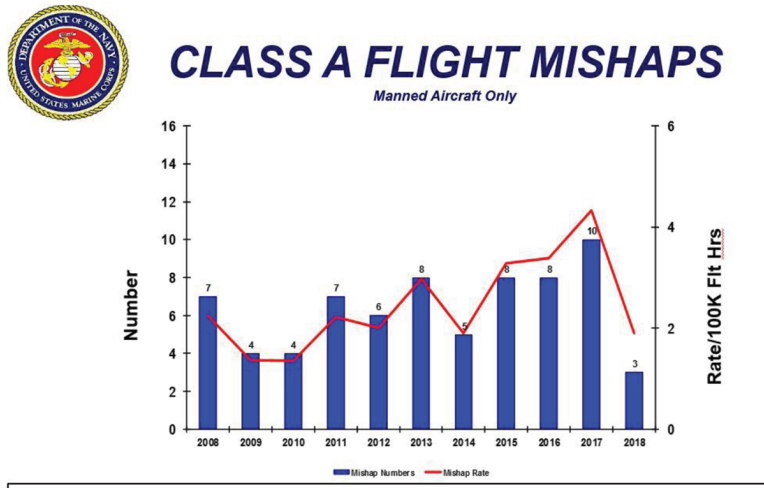
Thus far in fiscal year 2018, Naval Aviation has experienced 12 Class A Flight Mishaps. The initial analysis of those mishaps shows, five have an aircrew human factors component, zero have a maintenance human factors component, zero have a facilities human factors component, five have a material failure component, and three are unknown.

When comparing mishap characterizations to the total number of mishaps in a fiscal year the percentage trends indicate a decrease in mishaps with an aircrew human factors component and an increase in mishaps with a material failure component.

Despite a short term spike (in conjunction with recent and pointed media coverage), Class A Flight Mishap rates have changed very little over the last decade. Mishap prevention is always an utmost priority to the Naval Aviation Enterprise.



	4-Jun-18	4-Jun-17
CLASS A MISHAPS/MISHAP RATE FY COMPARISON:	9/1.61	5/0.88
FY17 MISHAPS/MISHAP RATE:	9/1.07	
10-YEAR AVERAGE (FY08-17) MISHAPS/MISHAP RATE:	9.40/1.05	



	4-Jun-18	4-Jun-17
CLASS A FM/FM RATE FY COMPARISON:	3/1.90	7/4.62
FY17 MISHAPS/MISHAP RATE:	10/4.32	
10-YEAR AVERAGE (FY08-17) MISHAPS/MISHAP RATE:	6.70/2.51	

General NELLER.

- It goes without saying that safety is our top priority. Although mishap trends have nearly doubled since 2013, the increase has been attributed to Class "C" mishaps (damage to aircraft of $50,000 or more, but less than $500,000; or a nonfatal injury or illness that results in one or more days away from work, not including the day of the injury).

- The more serious Class A and B mishap rates, among manned aircraft, have remained relatively steady over the last 5 years and are not contributing to the increasing trend we observed.
- We must eliminate all factors that cause or contribute to mishaps. We have determined that the increase in Class C mishaps is attributed to human error—primarily due to reduced supervision and attrition of experienced maintainers.
- We learned from the Navy's 2017 Strategic Readiness Review that we must develop a more structured data-driven learning culture to increase the institutional attention to the core fundamentals. We are doing that in our aviation communities by developing a consolidated Naval Air Forces Safety Management System policy to refocus commands on getting "back to the basics." This effort includes methods to increase awareness and oversight on Squadrons, Wings, and Carriers maintenance processes.

ASSIGNMENT OF FORCES

41. Senator HIRONO. Secretary Spencer and Admiral Richardson, following the collisions in the Pacific last year there have been several competing recommendations made regarding the responsibility for readiness generation in the Pacific. Given that China and Russia have significant naval capabilities in the Pacific and are clearly named as strategic competitors in the National Defense Strategy, it appears to me that it will be more important than ever to protect the speed, flexibility, and agility of our Pacific forces to respond to potential emergencies, crises, and contingencies in an expeditious manner. Do you consider speed, flexibility, and agility to be essential to carrying out naval operations in the Pacific?

Secretary SPENCER and Admiral RICHARDSON. Yes. Speed, flexibility, and agility enable the U.S. Navy to maneuver rapidly to gain advantage and are essential to carrying out naval operations in the Pacific.

42. Senator HIRONO. Secretary Spencer and Admiral Richardson, do you support any changes to the existing command and control Naval Forces in the Pacific, including readiness generation, to the extent that such changes would limit the speed, flexibility, and agility of a response, and/or place into question our resolve and commitment to our adversaries and allies in the Indo-Asia Pacific region?

Secretary SPENCER and Admiral RICHARDSON. Our in-depth C2 examination and several table top exercises have revealed that force generation capacity as well as force employment authority are capabilities that must be retained by both the Pacific Fleet and Fleet Forces Commanders because of the large areas and scope of responsibility their positions hold. Their authority must be commensurate with their responsibility in repairing, training, and deploying units as required in time of crisis or war.

ENERGY RESILIENCE AND ASSURANCE

43. Senator HIRONO. Admiral Richardson and General Neller, U.S. energy resilience is a vital component to our national security. The need to reduce energy consumption, use clean alternative energy sources, and increase U.S. security is closely tied to our overall national security and an important goal for all our branches of the military. How has the Navy and Marine Corps prioritized long-term energy resilience needs in this budget request in terms of operational fuel and delivery of electricity to installations?

Admiral RICHARDSON. The Navy addresses energy as a strategic resource that is essential to the successful execution of the Navy's afloat and ashore missions. Accordingly, the Navy Energy Strategy encompasses robust investments in people, technology, and programs across the Aviation, Expeditionary, Maritime, and Shore enterprises.

I. Operational Energy Investments

The Navy's fiscal year 2019 Energy investments prioritize efforts that increase lethality and effectiveness of forces through resilience, operational reach, and forward presence. To increase combat readiness and mission success, the Navy will make significant short-term gains by adjusting policies to enable more energy efficient operations, encouraging awareness and energy-conscious behavior, optimizing existing technologies to reduce energy consumption, and accelerating the implementation of new technologies. This includes making investments in technologies for both our maritime and aviation platforms, as well as researching the technical feasibility of cost-effective alternatives for diversifying energy supply and increasing flexibility.

II. Installation Energy Investments

The Navy recognizes installation energy security as a critical component to our national security. The fiscal year 2019 budget emphasizes Energy Security Framework as the model for investments in our installations, focusing on the three pillars of reliability, resiliency, and efficiency. The Navy is making investments in infrastructure to enable a more efficient use of our facilities and utility systems. We are working with our partners in industry and in the community to incorporate emerging technologies and processes, as we continue to leverage third party financing and in kind consideration to improve mission critical assets. We are enhancing cyber security for our utilities and other facility-related control systems. Finally, we are conducting mission assurance assessments to identify vulnerabilities that will help to prioritize energy security and infrastructure investment decisions in support of the Navy's mission.

General NELLER. The Marine Corps has identified energy resilience as a priority to ensure that our installations are able to generate combat power and our ability to protect our nation's interests are assured through the delivery of reliable and resilient power. We are reducing our energy consumption and partnering with industry to make our installations both energy efficient and resilient.

The Marine Corps is making strategic investments that enable efficiency, cost savings, infrastructure improvements, increased security and resilience, and increased productivity. Future investment focuses on six installations that represent approximately 60 percent of the Marine Corps' total energy consumption including some of the following projects:

- Marine Corps Base Camp Lejeune has undergone a large steam decentralization project that transitioned the installation from the use of coal-generated steam plants to individual high-efficiency natural gas-fired boilers. The $150 million project is planned to produce 636,000 MBTU annual savings (accounting for approximately 6 percent reduction in total USMC energy consumption).
- The Marine Corps is also taking advantage of OSD-level funding not only to address energy efficiency, but to increase the resilience of our installations. Utilizing funding under the Energy Resilience and Conservation Investment Program (ERCIP), a micro grid is being constructed (targeting completion March 2019) at MCAS Miramar which will provide power and control, including the ability to restore electrical power to continue full operations during times of compromised energy supply, of electrical distribution systems supporting mission critical buildings along the flight-line.

QUESTIONS SUBMITTED BY SENATOR ANGUS KING

NAVY SHIPBUILDING

44. Senator KING. Secretary Spencer and Admiral Richardson, the Navy awarded conceptual design contracts for the FFG(X) to five companies worth $15 million each. Does the current acquisition timeline still support the release of the request for proposals (RFP) in 4th quarter fiscal year 2019, and to award a detailed design and construction (DD&C) contract for the FFG(X) program in fiscal year 2020?

Secretary SPENCER and Admiral RICHARDSON. Yes, while the acquisition timeline for FFG(X) is aggressive, the Navy is maintaining the schedule to release the DD&C RFP in the fourth quarter of fiscal year (FY) 2019 and to award the DD&C contract in the fourth quarter of fiscal year 2020.

45. Senator KING. Secretary Spencer, by ending LCS procurement in fiscal year 2019 and starting procurement of FFG(X) in fiscal year 2020, what do you assess the implications are for the non-selected shipyards?

Secretary SPENCER. The Littoral Combat Ship (LCS) industry teams have the ability to compete for, and already are competing for, Government, non-U.S. Government, and commercial work. Should the LCS industry teams not be successful in securing sufficient workload beyond LCS, they will have to make business decisions to align with the market place.

46. Senator KING. Secretary Spencer and Admiral Richardson, the two DDG–51 shipbuilders are in the process of responding to the Navy's fiscal year 2018–22 DDG–51 Multiyear Procurement RFP. Are you committed to a DDG–51 multiyear outcome that will sustain both yards in the large surface combatant shipbuilding base?

Secretary SPENCER and Admiral RICHARDSON. Yes, the Department is committed to a DDG 51 multiyear outcome that will sustain both yards in the large surface

combatant shipbuilding base. The Navy considered both Government and industry objectives, including workload stability and the opportunity to earn a fair profit, in developing the competitive strategy for the fiscal year 2018 to fiscal year 2022 DDG 51 Multiyear Procurement. The solicitation included 10 firm ships (minimum award quantity of four ships to each shipbuilder). The solicitation also includes a request for priced option ships to provide further opportunities to increase DDG 51 workload at each shipyard. This option ship strategy will be used to award the additional ships included in the President's Fiscal Year 2019 Budget request, one per year in fiscal years 2019, 2021 and 2022. This approach maintains a stable and efficient workload at each builder while fostering competition across the procurement.

47. Senator KING. Secretary Spencer, what hull designs and other existing technologies are under consideration for the new CG(X) program?

Secretary SPENCER. The President's Fiscal Year 2019 Budget Request contained funding to commence the Future Surface Combatant Force Analysis of Alternatives (AOA). The planned force level AOA will produce the Future Large Surface Combatant Capabilities Development Document which will inform the hull designs and other existing technologies to be incorporated into the Future Large Surface Combatant (LSC). The Future LSC capability requirements will be targeted, in part, at recapitalizing the capabilities associated with the CG 47 *Ticonderoga*-class cruisers as they retire.

As part of the Future Surface Combatant Force AOA, a number of hull designs and existing (as well as developmental) technologies will be analyzed to determine the contribution to the warfighting effectiveness of the Future LSC as well as their contributions to the effectiveness of the overall force. Efforts will be made to utilize design and development work already completed through the Research and Development of earlier programs to incorporate lessons learned in a fiscally responsible manner.

ACQUISITION

48. Senator KING. Admiral Richardson, you mentioned in your opening statement that the Navy is trying to achieve greater performance through more agile acquisition processes. How is the Department of the Navy making it easier for small businesses to compete for contracts and partner with the Navy?

Admiral RICHARDSON. The Department of the Navy (DON) has undertaken a number of initiatives to make it easier for small businesses to compete for contracts and partner with the Navy. These initiatives include the following:

- *Small Business Advocacy:* Each Deputy Program Manager (DPM) is tasked as a Small Business Advocate responsible for identifying opportunities for small business within their program. Specific actions include:
  - o In fiscal year 2017, Small Business Advocate training was provided to DPM's to educate the workforce on advocacy responsibilities and expectations; and,
  - o Contracting Commands and Program Executive Offices have a written Small Business Strategy focused on fiscal year 2017 to 2018, with specific actions to increase opportunities for small businesses to participate in procurements as prime and subcontractors. Strategies will be updated over the summer with focus on fiscal years 2019 to 2020 and posted on a public facing website.
- *Contracting:* The Chief of Naval Research is planning a "Catapult" initiative which is designed to minimize the time it takes to bring a solution from discovery to deployment. This initiative will allow small businesses the opportunity to speak directly with subject matter experts from the DON to promote their solutions.

Small Businesses offer innovative, flexible, agile and affordable options in achieving the DON's mission. As stated in the National Defense Strategy, "Maintaining the Department's technological advantage will require changes to the industry culture, investment sources, and protection across the National Security Innovation base." The DON is committed to streamlining our contracting processes and making it easier for small businesses to compete for contracts and partner with the Navy.

QUESTIONS SUBMITTED BY SENATOR MARTIN HEINRICH

USS *LOS ALAMOS*

49. Senator HEINRICH. Secretary Spencer, this year is the 75th anniversary of Los Alamos National Laboratory. The people of Los Alamos, and the national laboratory, have had a strong relationship with the Navy, supporting the Department since World War II, through the Cold War, and continuing to enable it today. This support was critical during the Manhattan Project, through the creation of the nuclear Navy, and the development of the sea-based leg of the strategic nuclear triad. In recognition of the contributions of the people of Los Alamos and the national laboratory, the full New Mexico delegation is hopeful you will consider naming the next nuclear-powered fast attack submarine the USS *Los Alamos*. When are the next opportunities for naming nuclear-powered fast attack submarines?

Secretary SPENCER. Ship and submarine naming packages are initiated once a contract has been awarded. The next expected availability for a fast-attack submarine is early 2019. Traditionally, and in accordance with the established naming convention, *Virginia*-class submarines are named after states but exceptions exist in USS *Rickover* and USS *John Warner*. The earliest opportunity to name a *Columbia*-class ballistic missile submarine is expected to be in the 2021 timeframe. As you pointed out, the patriotic men and women who have worked at the Los Alamos National Laboratory over its 75-year history have made a lasting and monumental contribution to national security and global stability. Honoring Los Alamos on this significant anniversary is a worthy recommendation, and one which I will give every consideration at the next opportunity to name a submarine.

NAVAL INSTALLATION ENERGY RESILIENCE

50. Senator HEINRICH. Secretary Spencer, I am concerned about the vulnerabilities of the military's energy infrastructure to cyber-attacks, physical attacks and severe weather, which threaten our ability to recover from multiday utility disruptions. Our adversaries are actively targeting our utilities infrastructure and have the potential to disrupt energy supplies to our military facilities at critical times, putting the nation at risk. I understand that the Navy's Resilient Energy Program Office has been working to improve energy resilience through microgrids, fuel cells, and bulk battery facilities.

Can you discuss the advances the Navy is making in energy resilience, particularly in energy storage improvement?

Secretary SPENCER. The Department of the Navy is indeed working hard to identify vulnerabilities and mitigation strategies to close critical energy security gaps. Through our Energy Security Framework (ESF), our installations commands are working closely with the DOD mission assurance community to prioritize investments and operational procedures to ensure critical facilities on priority installations can operate under any scenario/situation. While always searching for the most cost-effective solutions and remaining technology agnostic, targeted investments in island-capable micro grids, advanced control systems, distributed generation resources, and energy storage systems are intended to ensure critical missions will remain operational during disruptions in the power grid.

51. Senator HEINRICH. Secretary Spencer, where else do you see opportunities to improve energy resilience?

Secretary SPENCER. In addition to the Energy Resilience and Conservation Investment Program (ERCIP), the Department is primarily relying on private capital and alternative financing mechanisms to obtain energy resilience. Additional opportunity exists to improve reliability, resiliency, cyber security and efficiency of our existing utilities and facilities infrastructure but the Facilities Sustainment, Restoration and Modernization (FSRM) account in the Operations and Maintenance (O&M) appropriation is consistently pressurized to meet critical and significant deficiencies in poor and failing facilities across the Department.

Additional FSRM investment levels in the modernization of electric and water distribution systems, metering/data acquisition, advanced cyber control/monitoring systems and data analysis capabilities would greatly improve the Department's energy resilience. Given the current state of FSRM accounts, the Department will continue to plan and program energy investments that provide greatest improvement to critical facilities on priority installations and those that have financial payback within the FYDP.

52. Senator HEINRICH. Secretary Spencer, what obstacles, if any, are delaying implementation of these emerging technologies?

Secretary SPENCER. As the Department modernizes and expands our warfighting capabilities, installation infrastructure continues to compete for scarce funding resources. Years of underinvesting in facilities and utility systems has resulted in a significant backlog in sustainment, restoration and modernization across the Department. Some additional obstacles that delay the implementation of emerging technologies, include:

- Business case—many new technologies do not provide a lower life-cycle cost in the initial stages of implementation. As responsible stewards of taxpayer dollars, DON has made a conscious decision to be technology agnostic and to conduct life-cycle cost analyses on all proposed energy security solutions.
- Design criteria of existing facilities may not accommodate emerging technologies. Established criteria such as UFC 3–520–1 "Interior Electrical Systems" that prohibit lithium batteries in occupied DOD facilities prevent us from implementing modern Uninterruptible Power Supplies (UPS) systems in critical operations and data centers. Prudent concerns over ventilation, fire suppression, and heating and air conditioning design standards require additional study before this technology can be used in occupied facilities
- The pace of evolving cyber threats and the lengthy timelines to assess, test, authorize, acquire and implement new control systems to operate on DOD infrastructure delays implementation of the latest "smart" technology in our utilities and facility related control systems. The Department is working to streamline the DOD Risk Management Framework processes to reduce the timeline necessary to obtain Authority to Operate (ATO) for modern control systems but competing requirements in the IT and Cyber domains continue to burden the system.

The Department of the Navy works closely with DOD and Congress to ensure the highest priority missions are protected and implementation of emerging technologies is expedited where needed to minimize the risk to critical facilities.

USS *DESERT SHIP*

53. Senator HEINRICH. Admiral Richardson, New Mexico is proud to be the home for USS *Desert Ship* (LLS–1), one of only two land-locked ships in the U.S. Navy. USS *Desert Ship* has a long history of testing the Navy's next generation of weapon systems. What role will USS *Desert Ship* play in the testing and development of weapon systems like the electromagnetic railgun and the Navy Laser Family of Systems?

Admiral RICHARDSON. Electromagnetic Railgun (EMRG) and Hyper Velocity Projectile (HVP) have conducted or plan to conduct significant tests at the New Mexico White Sands Missile Range (WSMR) in the near term. The EMRG Test Site at WSMR was purposely located adjacent to the *Desert Ship* in order to enable future testing in combination with the AEGIS combat system and fire control capabilities provided by *Desert Ship.*

The Navy has decades of experience evaluating laser weapon technology at the WSMR High Energy Laser System Test Facility (HELSTF) and such testing will continue in the future. One of the Navy Laser Family of Systems (NLFOS) initiatives, the Solid State Laser Technology Maturation (SSL–TM) project, will be conducting land-based testing at HELSTF in fiscal year 2019 before installation on USS *Portland* (LPD 27). The interface between SSL–TM and the Ship Self Defense System combat system on LPD 27 precludes using Desert Ship, which is AEGIS-based.

The NLFOS HELIOS project will install laser weapons on DDG51 Flight IIA ships and will be integrated with the AEGIS combat system. Test locations and requirements are still being evaluated in the context of schedule requirements, cost, and operational fidelity of the environmental conditions. Desert Ship may be a viable facility for testing and development of HELIOS and/or other follow-on systems in the future.

DIRECTED ENERGY

54. Senator HEINRICH. Admiral Richardson, I am pleased to see that the Navy is placing a high priority on developing directed energy weapons systems in the fiscal year 2019 budget request. The necessary technology for directed energy weapons is nearly there and I think the $299 million in the budget for the Navy Laser Family of Systems will do a lot to drive this home. If funded, do you think this budget well get directed energy weapons through the valley of death and into operationally fielded prototypes?

Admiral RICHARDSON. Yes. The Navy has formally designated its Naval Laser Family of Systems (NLFOS) as Rapid Prototyping, Experimentation, and Dem-

onstration (RPED) programs. This puts NLFOS at the top of the Navy's acquisition priorities behind only *Columbia* and near-term safety issues. The Navy's strategy with the NLFOS projects is structured to provide near-term capabilities that bridge the "valley of death" between technology and capability while simultaneously increasing the pace of learning that enables the Navy to make informed decisions in the future on how to incorporate laser weapons into a layered defense. The Navy's budget request for fiscal year 2019 provides essential funding to keep the Navy on track to install several NLFOS prototypes and demonstration units on Navy ships in fiscal year 2019, including two Optical Dazzling Interdictor Navy (ODIN) systems on DDG 51 Flt IIA ships and the Solid State Laser Technical Maturation (SSL–TM) system to be installed on USS *Portland* (LPD 27). The Navy's fiscal year 2019 request also includes funds to continue development of the High Energy Laser with Integrated Optical-dazzler & Surveillance (HELIOS) systems that could be available for installation on DDG 51 Flt IIA as early as fiscal year 2020. It is anticipated that all of these systems will be operationally fielded as part of the normal deployment schedules of the ships they are installed upon.

55. Senator HEINRICH. Admiral Richardson, what is the path from here to a program of record for these weapon systems?

Admiral RICHARDSON. Yes. The Navy has formally designated its Naval Laser Family of Systems (NLFOS) as Rapid Prototyping, Experimentation, and Demonstration (RPED) programs. This puts NLFOS at the top of the Navy's acquisition priorities behind only *Columbia* and near-term safety issues. The Navy's strategy with the NLFOS projects is structured to provide near-term capabilities that bridge the "valley of death" between technology and capability while simultaneously increasing the pace of learning that enables the Navy to make informed decisions in the future on how to incorporate laser weapons into a layered defense. The Navy's budget request for fiscal year 2019 provides essential funding to keep the Navy on track to install several NLFOS prototypes and demonstration units on Navy ships in fiscal year 2019, including two Optical Dazzling Interdictor Navy (ODIN) systems on DDG 51 Flt IIA ships and the Solid State Laser Technical Maturation (SSL–TM) system to be installed on USS *Portland* (LPD 27). The Navy's fiscal year 2019 request also includes funds to continue development of the High Energy Laser with Integrated Optical-dazzler & Surveillance (HELIOS) systems that could be available for installation on DDG 51 Flt IIA as early as fiscal year 2020. It is anticipated that all of these systems will be operationally fielded as part of the normal deployment schedules of the ships they are installed upon.

QUESTIONS SUBMITTED BY SENATOR ELIZABETH WARREN

MARINE MAMMAL PROTECTION ACT (MMPA)

56. Senator WARREN. Secretary Spencer, the Navy submitted a proposal to the Committee for the fiscal year 2019 NDAA to amend the Marine Mammal Protection Act (MMPA), which ensures protections from human harm to whales, dolphins, and other marine mammals. The current process requires the Navy to participate in an MMPA rulemaking every five years, to analyze impacts to marine mammals and propose mitigation measures to the extent "practicable," and to obtain an Incidental Take Authorization for five years (known as a Letter of Authorization, or LOA). The Navy's proposal would strike the requirement to obtain these MMPA permits every five years, leaving the final permits obtained by the Navy in place indefinitely.

Has the Navy ever been denied an Incidental Take Authorization from the National Oceanic and Atmospheric Administration (NOAA)?

Secretary SPENCER. To date, the National Oceanic and Atmospheric Administration (NOAA) has been able to make the requisite statutory findings that taking associated with the Navy's actions would: (1) have no more than a negligible impact on those marine mammal species or stocks, and (2) not have an immitigable adverse impact on the availability of the species or stock for subsistence use, and issue the Navy incidental take authorizations (ITAs) it has requested. However, the rulemaking process to finalize the ITAs consistently takes us to the 5-year expiration date, and requires extraordinary effort to ensure timely MMPA coverage and maintain Fleet readiness. The 5-year limitation unnecessarily risks Navy training and testing activities without benefiting the species.

The Navy's fiscal year 2019 NDAA proposal seeks only to remove the 5-year limitation on the duration an MMPA permit can be authorized. This would allow the duration of future MMPA permits to be consistent with the duration of the action so long as the action and effects do not substantively change. This change would

align the MMPA's permitting process with that of the Endangered Species Act (ESA) consultation process. The ESA allows the regulatory agency's Biological Opinion to have a duration that is aligned with that of the action, or that extends into the foreseeable future, provided the action and its effects on protected species do not substantively change and no other provisions outlined in 50 CFR 402.16 are triggered that would require re-initiation of formal consultation.

57. Senator WARREN. Secretary Spencer, what is the overall annual financial cost that the Navy incurs to comply with the current five-year LOA permitting process?

Secretary SPENCER. The administrative cost for the Navy's At-Sea environmental compliance for the years 2005 through 2017 was $362.5 million. This translates to an annual average cost of $28 million.

The estimated annual average financial cost (fiscal year 2019–fiscal year 2023) that the Navy will incur to comply with the aspects of the at-sea compliance program that are strictly associated with the current five year LOA permitting process is ~$20 million per year. This cost is broken up into two main aspects: (1) costs associated with the modeling, analysis, and development of compliance documentation; and (2) manpower to execute and provide oversight to the compliance processes.

On average, $13–15 million per year of the costs are associated with the modeling, analysis and development of compliance documentation. This money funds the following key tasks:

- the development of new or updating of existing marine mammal density models;
- the acoustic modeling of Navy sound sources (e.g. sonar, explosives, airguns, etc.) and their associated impacts to marine mammals;
- the analysis of acoustic modeling results and the development of other qualitative analyses of Navy activities;
- the development of an MMPA LOA application and an ESA Biological Assessment consultation package
- the generation of National Environmental Policy Act (NEPA) documentation to support the LOA rulemaking[2]

The remaining $5 million per year in costs, are associated with the Navy's manpower to provide oversight, and review of all of these products. There are over 50 Navy employees (Military and Civilian), throughout the following commands DASN(E), OPNAV N45, USFF, CPF, NAVAIR, NAVSEA, ONR, SPAWAR, and NAVFAC, whose primary responsibilities are to support the above functions. Therefore, the manpower costs associated with these staff are estimated to add up to ~$5 million in additional costs per year that the Navy incurs to comply with the current five year LOA permitting process.

These annual requirements cost the Navy an additional $11–12 million dollars per year (fiscal year 2019–23), and are associated the following:

- Marine mammal monitoring requirements of the LOA
- Sonar and explosive reporting requirements of the LOA
- Marine mammal mitigation requirements of the LOA (e.g. North Atlantic Right Whale aerial surveys, updating the Navy's PMAP program with mitigation requirements)

Lastly, the above costs also do not include research investments the Navy voluntarily makes as part of its environmental stewardship role, to improve the general knowledge about marine mammals and to advance the Navy's understanding of the potential impacts of our activities to marine mammals. The Navy invests between $14–15 million annually in basic and applied research on marine mammals. This research is primarily funded through two main programs: Office of Naval Research's Marine Mammals and Biology Program, and the Chief of Naval Operation N45's Living Marine Resources program. A small amount of research is also funded through the Naval Air Systems Command (NAVAIR), Naval Sea Systems Command (NAVSEA), and the Space and Naval Warfare Systems Command (SPAWAR).

58. Senator WARREN. Secretary Spencer, what percentage of the Navy's total annual budget is represented by the overall annual financial cost incurred by the Navy to comply with the current LOA permitting process?

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[2] Because issuance of five year regulations under the MMPA is classified as a major federal action it requires the development of National Environmental Policy Act (NEPA) documentation. Therefore, each five year permit requires the Navy to update or re-do its existing NEPA documentation. The National Marine Fisheries Service is a cooperating agency on the Navy's NEPA documentation and adopts the Navy's NEPA document as their own. However, all costs associated with the NEPA documentation to support NMFS's issuance of the five year regulations are borne by the Navy.

Secretary SPENCER. The Navy's total financial costs to comply with the 5-year LOA permitting process is approximately $20 million per year (see response to Question 56, for additional details).

As laid out in the Department of Defense Presidential Budget Exhibit #28 submitted to Congress, the average annual cost of the Navy's entire Environmental Compliance, Pollution Prevention, and Conservation Program is approximately $470 million (fiscal year 2019–23). The costs associated with complying with the 5-year LOA permitting process all fall within the Conservation program area. The average annual cost of the Navy's Conservation portfolio is $76.1 million per year (fiscal year 2019–23). Therefore, the $20 million annual cost of complying with the 5-year LOA permitting process represents ~26.3 percent of the entire Conservation Program Area, and ~4.25 percent of the Navy's entire Environmental Compliance, Pollution Prevention, and Conservation Program.

The Navy's total financial cost to comply with the 5-year MMPA permitting process represents a very small percentage (0.01 percent) when viewed in the context of the Navy's total annual budget, currently proposed at $194.1 billion (Base and Overseas Contingency Operations) for fiscal year 2019.

59. Senator WARREN. Secretary Spencer, to your knowledge, has the Navy's readiness been compromised in any manner due to the current five-year LOA permitting process required by the MMPA?

Secretary SPENCER. Litigation under the MMPA has on various occasions unreasonably restricted Navy training and testing activities, and does limit the time, place and types of training and testing activities that Navy is able to conduct. Two examples are illustrative.

Surveillance Towed Array Sensor System (SURTASS) Low Frequency Active (LFA) Sonar: There have been nine cases that have sought to restrict the Navy's use of SURTASS LFA sonar. Three cases concerned Navy's employment of SURTASS LFA sonar as authorized by regulators in 2002, 2007, and 2012 under the MMPA and ESA. In two of these cases, the Navy's activities were subject to significant geographic restrictions beyond what had already been imposed by the regulators. In 2002, for example, the court granted plaintiffs' request for a preliminary injunction, which limited to four areas the locations in the western Pacific where the Navy could use SURTASS LFA sonar. In 2007 the parties entered into a stipulated settlement after the judge again ruled that a preliminary injunction was appropriate. In this settlement, use of SURTASS LFA sonar was prohibited in portions of the western Pacific.

Hawaii and Southern California Testing and Training: In 2015, plaintiffs filed suit against the Navy and the NMFS alleging violations of NEPA, the ESA and the MMPA. The subject of the lawsuit was the Navy proposal to conduct training and testing activities using mid-frequency active (MFA) sonar in waters surrounding Hawaii and off the southern California coast, and NMFS issuance of MMPA letters of authorization for these activities. The lawsuit was filed in the Hawaii district court and that court ultimately ruled in favor of plaintiffs on all claims on March 31, 2015. Before the judge could rule on the remedy, the Navy, NMFS and plaintiffs settled the case; settlement included significant geographic restrictions to MFA sonar related testing and training activities in Hawaii and Southern California waters.

To date, the Navy has taken the necessary steps to mitigate impacts on readiness as a result of the current five year LOA permitting process required by the MMPA. Although the MMPA was amended to make it more efficient for military readiness activities, the Navy has requested that the Secretary of Defense invoke the Department's National Defense Exemption (NDE) to the MMPA three times since the provision was inserted into the law in 2004 in order to maintain Fleet readiness. Additionally, the Navy has expended funds on environmental compliance documentation at the expense of other priorities. Given the temporal limitation under the MMPA for letters of authorization (five years), the record shows Navy will continue to confront this risk on a recurring basis.

60. Senator WARREN. Secretary Spencer, has the Navy conducted an assessment of any kind of the impact of its proposal on marine mammals? If yes, can you please share that assessment with the Committee? If no, please explain whether the Navy will conduct such an assessment.

Secretary SPENCER. The Navy's assessment is that this proposal will have no impact on marine mammals. Currently the Navy requests Marine Mammal Protection Act (MMPA) take authorization based upon training, testing and other military needs such as in water construction. Under the MMPA in the case of military readi-

ness activities, the Secretary of Commerce or the Secretary of the Interior (Commerce or Interior) "shall allow" the incidental taking of marine mammals upon request after notice and an opportunity for public comment so long as certain findings are made by the Secretary and once regulations are prescribed. These authorizations are currently issued under Letters of Authorizations (LOA) that are only valid for up to 5-years.

Removal of the 5-year time limit on MMPA authorizations will not result in Navy requesting greater take authorization. The Navy's request will continue to be based upon the forecasted future level of required military activity. Under the proposal either Commerce or Interior will continue to have to find that the total taking authorized will have a negligible impact on such species or stock. Commerce or Interior will also still be required to publish regulations setting forth permissible methods of taking, and other means of effecting the least practicable adverse impact on such species or stock. Although under the Navy proposal the 5-year limit will be removed, either Commerce or Interior will retain the discretion to issue LOAs for whatever time period the applicable Secretary deems appropriate. As under current law, the Navy will not be authorized to exceed this level of take without seeking additional authorization from Commerce or Interior. And as under current law, should Commerce or Interior find that Navy was not substantially complying with its authorization, or that the taking allowed under the authorization was having more than a negligible impact on the species or stock, Commerce or Interior would be required to withdraw or suspend permission to take marine mammals.

READINESS AND OPERATIONAL TEMPO

61. Senator WARREN. Admiral Richardson, last year, the 7th Fleet suffered three collisions in the Western Pacific, and 17 sailors lost their lives. I recently returned from a trip to Japan, where I visited the 7th Fleet at Yokosuka. We discussed the results of the Navy's review and what has changed for them.

In October 2017, the Comprehensive Review concluded that: "the pressure to meet rising operational demand over time caused Commanders, staff and crew to rationalize shortcuts under pressure." However, when I spoke to the 7th Fleet earlier this month, they told me that their operational tempo had not changed very much.

What changes has the Navy has made in the Pacific Command (PACOM) area of responsibility (AOR)?

Admiral RICHARDSON. Within the past year, the Navy has established Naval Surface Group, Western Pacific (NSGWP) to provide training and readiness oversight to surface ships assigned to Seventh Fleet, as a result of implementing recommendations of the Comprehensive Review and Strategic Readiness Review. The Navy continues to increase the capability and capacity of air, surface, and subsurface assets by assigning more and more capable platforms to the AOR to bolster combat credible forward presence.

Additionally, a few key actions have been taken to improve readiness:

7th Fleet Operations—7th Fleet has adopted new scheduling and force generation processes that identify mismatches in force employment and force generation while protecting training/certification periods for ships. Through restoring the Optimized Fleet Response Plan-Japan (OFRP–J) construct, Japan-based Cruisers and Destroyers now have dedicated time to accomplish maintenance, training, and certification. Operational tasking is being adjusted to protect training requirements.

Risk Assessment Mitigation Plans (RAMPs) replaced by Certification Deficiency Risk Management Plans (CDRMP)—All pre-existing RAMPS have been cancelled. Ships only conduct missions they are certified for. If a ship is ever required to conduct operations before completing its Basic Phase, a CDRMP must be prepared by NSGWP, agreed to by CNSP and C7F, and approved by COMPACFLT.

Ready for Sea Assessments (RFSAs)—In order to determine their material and operational readiness, RFSAs have been completed for FDNF–J ships not currently in a maintenance availability. All remaining FDNF–J ships are being closely tracked for RFSA completion, as they transition out of maintenance and resume normal operations.

62. Senator WARREN. Admiral Richardson, what steps, if any, has the Navy taken to reprioritize mission demands across combatant commands?

Admiral RICHARDSON. The Navy generates maritime capability (defined as forces which are properly manned, trained, equipped, and certified) in support of Joint Staff adjudicated combatant commander requirements and consistently reviews its force posture to best support the National Defense Strategy. The Joint Staff prioritizes and balances combatant commander mission requirements across the

Joint Force in accordance with the strategic priorities found in our governing strategic documents. Ultimately, The Secretary of Defense approves all operational deployments and the assignment of forces to combatant commanders.

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

TUESDAY, APRIL 24, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

AIR FORCE POSTURE

The committee met, pursuant to notice, at 9:30 a.m. in Room SD–G50, Dirksen Senate Office Building, Senator James M. Inhofe, presiding.

Committee Members present: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Cruz, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. The committee meets today to receive testimony on the posture of the U.S. Air Force and its fiscal year 2019 budget request.

We welcome our witnesses: Secretary Heather Wilson and General David Goldfein. Fein is fine. We all remember that.

The Air Force is at a critical moment in its history. It faces a dual task of digging out of a readiness crisis while at the same time managing a broad modernization effort. You do not have the luxury of choosing one or the other. You got to do both.

I was pleased to see increases in the budget request for fiscal year 2019 to address both readiness and modernization, but I am interested to hear from you how the Air Force will manage this balance in the years ahead, particularly if the Budget Control Act funding levels return in 2020.

I continue to be concerned with the availability of aircraft and the preparedness of our airmen. Trends in pilot retention remain troubling with the current shortage of some 2,000 pilots. It was not long ago that we were using the figure 1,500. So it does not seem to be getting any better and we need to address that.

The NDS [National Defense Strategy] makes clear that space is and will continue to be a contested environment. Both Russia and China continue their robust efforts to extend warfighting into outer space, and we can no longer take our space-enabled capabilities for

granted. All of this makes our dismal space failures even more detrimental.

Despite recent reforms, lasting change will require your leadership and vision to sustain a whole-of-the-government approach.

Finally, I look forward to hearing about the progress of the Air Force nuclear modernization efforts. As we heard in the Nuclear Posture Review earlier this year, we cannot afford to stand still in this area when our adversaries have been investing in their nuclear forces for the last 2 decades. I know the Air Force has been working hard on the new bomber and missile programs, as well as new engines for the B–52. New engines for the B–52. I just noticed that the life extension now is going to be 2050. It is going to be 100 years old by that time.

But anyway, Senator Reed.

STATEMENT OF SENATOR JACK REED

Senator REED. Thank you very much, Mr. Chairman. Let me join you in welcoming Secretary Wilson and General Goldfein. Thank you for your service and thank you for your great leadership of the United States Air Force. We are grateful also to the men and women of the Air Force who do so much, and please convey to them our deep appreciation and thanks, as you always do.

Our witnesses this morning face huge challenges as they strive to balance the need to support ongoing operations and sustain readiness with the need to modernize and keep the technological edge in the three critical domains of air, space, and cyberspace.

The Air Force has produced a budget that even with proposed budget increases reflects very tough decisions. The budget increases the Air Force is proposing for fiscal year 2019 would seek to increase readiness, address shortfalls in munitions, address shortfalls in pilots and maintenance personnel, and modernize our strategic deterrent capability.

In addition, the Air Force faces a continuing challenge in managing the cost and progress of its major acquisition programs, including the Joint Strike Fighter, the most expensive DOD acquisition program in history, and a new tanker and a new bomber. We should hear from our witnesses on the progress of all three of these programs this morning.

I would also like to hear more about another modernization program. In this budget, the Air Force is proposing to truncate the program to modernize the Joint Surveillance and Target Radar System, or JSTARS program. The Air Force deserves our careful consideration of this proposal, but we must consider it against the recent history of abrupt Air Force program changes.

The Air Force tried several years to retire the A–10 fleet. Congress turned down the proposals. Now the Air Force is keeping the A–10 and will continue experimenting with a new light attack aircraft (OA–X) that would undoubtedly be less survivable than the A–10. Spending for OA–X could cost the Air Force several hundred million dollars or more.

The Air Force supported a Nunn-McCurdy certification that the Global Hawk remotely piloted vehicle was critical to national security and then proposed canceling the program in favor of the U–2 program within a few months of the Global Hawk certification.

Later the Air Force wanted to cancel the U–2 program in favor of the Global Hawk.

The Air Force first proposed to retire nearly half of the Compass Call aircraft without replacement, then decided that modernizing the Compass Call program was so important that they had to pursue a sole-source contracting strategy for the program.

The Air Force was pursuing a program to buy the C–27 airlift aircraft because Air Force witnesses said that the C–130 airlift aircraft could not meet their requirements. Later the Air Force canceled the C–27 program and said that the C–130 was perfectly fine for meeting the direct support mission.

With regard to the JSTARS program, the Air Force originally proposed to retire a sizeable portion of the current fleet of JSTARS aircraft with no immediate replacement in sight. When Congress turned down that proposal, the Air Force submitted a modernization plan to replace the existing capability with a new business jet and a new radar. The contract to implement the JSTARS modernization plan is currently in source selection. But now, as I mentioned earlier, the Air Force's fiscal year 2019 budget proposes to cancel that JSTARS solicitation and pursue another path. The Air Force has mentioned the National Defense Strategy as a reason for making this decision, but the indication about this decision seems to have been made before the National Defense Strategy.

I look forward to hearing about updating these efforts and all your efforts, including progress on improving shortfalls within the remotely piloted aircraft community and shortfalls within the larger pilot personnel community.

Again, thank you very much for your committed leadership to the Air Force, and thank you for being here today.

Senator INHOFE. Thank you, Senator Reed.

Secretary Wilson and General Goldfein, we want to hear your opening statements. We will start with you, Secretary Wilson.

STATEMENT OF THE HONORABLE HEATHER A. WILSON, SECRETARY OF THE AIR FORCE

Dr. WILSON. Thank you, Mr. Chairman.

I would like, with consent, to put my entire statement in the record.

Senator INHOFE. Without objection.

Dr. WILSON. And just summarize a few points.

First of all, Mr. Chairman and Ranking Member Reed, thank you very much for the hearing today.

I would like to highlight a few things that are in our fiscal year 2019 budget proposal.

The budget proposal for fiscal year 2019 does align with the National Defense Strategy, and we developed this budget proposal at the same time the National Defense Strategy was being drafted. And so there is a direct influence there.

The National Defense Strategy recognizes that we face a more competitive and dangerous international security environment than we have faced in decades. Great power competition has reemerged as the central challenge for U.S. security and prosperity.

There are what I would say are two bold moves in this budget and one continuing theme.

With respect to the bold moves and the changes, we are accelerating defendable space to deter, defend, and prevail against anyone who seeks to deny our ability to freely operate in space. There is an 18 percent increase from the fiscal year 2018 5-year defense plan to the fiscal year 2019 5-year defense plan in space, and there are significant changes there.

The second bold move is the shift to multi-domain operations, particularly with respect to command and control and the way in which we do command and control in a disaggregated way rather than relying on a platform-centric upgrade, which is the JSTARS program.

So those are the two large shifts and changes driven by the environment within which we find ourselves.

The continuing theme and the continuing effort is to keep improving the readiness of the force to win any fight anytime. In fiscal year 2017, we kind of started to turn the corner. The additional resources added by the Congress in fiscal year 2018 are helping us to start to climb out of a readiness deficit, and the fiscal year 2019 proposal with the budget certainty that the Congress has given us will help us to restore the readiness of the force. And I wanted to thank you publicly for that effort. We need that certainty and we are committed to using the dollars which you appropriate wisely in the defense of the nation.

Chief?

[The prepared statement of Dr. Wilson and General Goldfein follows:]

PREPARED STATEMENT BY HONORABLE DR. HEATHER WILSON AND GENERAL DAVID L. GOLDFEIN

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 United States 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 ofcritical 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 percent 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 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 percent 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—thesurvivable 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 5 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 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 onthe 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 frontline operational squadrons[1] 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 fiscal year 2019 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 percent military pay raise, increased housing and subsistence 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, 15KC–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 fiscal year 2019 budget represents a 33 percent 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

[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.

are investing in our people, ensuring they have theright 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 7E–3 Airborne Warning and Control System (AWACS) aircraft and keep the current E–8C Joint Surveillance Target Attack Radar System (JSTARS) operational through the mid-2020s, as we developand 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 contested environment. The fiscal year 2019 budget includes $1.0 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 childcare 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.

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 percent 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 attackcapability. 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 fiscal year 2019.

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.

Moving Faster to Defendable Space: The fiscal year 2019 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.

Fore going 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 detectandreport 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 recentst and-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 Control 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 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 jointfight, even in a contested environment.

Strengthening Alliances: The National Defense Strategy emphasizes the importance of alliances and partnerships. The fiscal year 2019 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 fiscal year 2020 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 fiscal year 2016 and fiscal year 2017 National Defense Authorization Acts, we are streamlining Air Force acquisition. We have mile stone 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 proto typing 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 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.

STATEMENT OF GENERAL DAVID L. GOLDFEIN, CHIEF OF STAFF, UNITED STATES AIR FORCE

General GOLDFEIN. Thank you, Senator Inofe, Ranking Member Reed, distinguished members of the committee. It is an honor for Secretary Wilson and I to represent 670,000 airmen as we update you on the Air Force and our budget proposal for 2019.

And I will begin by thanking this committee for its leadership in building and then gaining approval for a historic budget that will continue the rebuilding of the U.S. military as we return to an era of great power competition. And central to this effort was the perseverance, tenacity, and leadership of Chairman John McCain, who we know is recovering today in his beloved Arizona. As airmen we will never forget that he shared his Vietnam POW experience with men like Bud Day and Lance Sijan. We admire his leadership and wish him and his family our warmest regards as he takes on this latest challenge and we hope to see him soon in these hallowed chambers.

A fitting testimony to his unwavering dedication and commitment, this budget request allows our nation to confront today's threats and moves us towards an Air Force we need to face tomorrow's challenges. As airmen, we first defend the Homeland and our allies with a safe, secure, and effective nuclear deterrent, and we are expected to own the high ground with air and space superiority. And as stated in the National Defense Strategy, we are expected to project America's military power forward with our allies and our partners as we bring global vigilance, global reach, and global power to the joint team.

This historic budget we discuss today continues the recovery you set in motion in 2017 when we stopped the continued erosion of our readiness following years of budget instability. In 2016, our pilots averaged just 17 hours of flying time per month. We were able to advance that number to 19 hours in 2018, and with this budget, we begin restoring pilot proficiency to 21 hours per month in 2019. Pilots join to fly and this budget gets them back in the air.

In 2016, we faced a shortage of over 4,000 maintainers. In 2018, we will reduce that number to almost zero. 10 years of maintenance experience lost cannot be gained overnight. Yet, this budget builds the foundation for a full recovery.

Nine years of continuing resolutions have negatively affected our munitions manufacturers and the industrial base that we will need in a peer fight. Under CRs [Continuing Resolutions], we placed industry in a difficult situation to retain capacity and a roster of highly skilled workers with appropriate security clearances without being able to clearly identify what we could afford to purchase each year. This budget request fully funds preferred munitions to industry capacity, allowing for 9,000 line items above fiscal year 2018 totals. With your continued support of this 2019 budget, for the first time in years, we have a National Security Strategy, a National Defense Strategy, and a Nuclear Posture Review and the resources required to support them.

Strategic alignment. Said another way as has been argued so loudly by this committee, for the first time in years, we have a strategy-driven budget versus a budget-driven strategy. And on behalf of all of our airmen, I can only say thank you.

However, we also know that we only have visibility on this plan through 2019, and a return to the disastrous budget caps of BCA [Budget Control Act] in 2020 would repeat the damage caused by the 2013 sequester from which we are still recovering as a service.

And finally, we are acutely aware that every dollar we are given is a dollar that was earned by Americans. It is our solemn obligation to remain good stewards of those dollars.

Thank you again for the opportunity this morning to testify on behalf of airmen who are standing the watch.

Secretary Wilson and I welcome your questions.

Senator INHOFE. Thank you, General Goldfein.

I appreciate your comments about Senator McCain, and on his behalf right now, I will read his statement since a quorum is present.

Since the quorum is now present, I ask the committee to consider a list of 256 pending military nominations. Included on this list are the nominations of Admiral Davidson to be Commander, U.S. Pacific Fleet; General O'Shaughnessy to be the Commander of the U.S. Northern Command (NORAD). All these nominations have been before the committee the required length of time.

Is there a motion to favorably report this list of 256 pending nominations to the Senate?

Senator REED. So moved.

Senator WICKER. Second.

Senator INHOFE. All in favor, say aye.

[Chorus of ayes.]

Senator INHOFE. The motion carries.

[The information referred to follows:]

MILITARY NOMINATIONS PENDING WITH THE SENATE ARMED SERVICES COMMITTEE WHICH ARE PROPOSED FOR THE COMMITTEE'S CONSIDERATION ON APRIL 24, 2018.

1. **MG Dorothy A. Hogg, USAF to be lieutenant general and Surgeon General of the Air Force** (Reference No. 1110)
2. In the Navy there is 1 appointment to the grade of captain (Edward M. Crossman) (Reference No. 1276)
3. **RADM Richard P. Snyder, USN to be vice admiral and Inspector General, Department of the Navy** (Reference No. 1555)
4. In the Marine Corps there is 1 appointment to the grade of major (Douglas R. Burian) (Reference No. 1590)
5. **VADM John C. Aquilino, USN to be admiral and Commander, US Pacific Fleet** (Reference No. 1596)
6. In the Air Force there are 4 appointments to the grade of colonel (list begins with Richard G. Anderson) (Reference No. 1597)
7. In the Air Force there are 14 appointments to the grade of lieutenant colonel (list begins with Ronnelle Armstrong) (Reference No. 1600)
8. In the Air Force there are 51 appointments to the grade of lieutenant colonel (list begins with Alison Lee Beach) (Reference No. 1601)
9. **VADM Charles A. Richard, USN to be vice admiral and Commander, Naval Submarine Forces/Commander, Submarine Force, US Atlantic Fleet, and Commander, Allied Submarine Command** (Reference No. 1668)
10. **Capt. Gregory N. Todd, USN to be rear admiral (lower half)** (Reference No. 1721)
11. **Capt. John S. Lemmon, USN to be rear admiral (lower half)** (Reference No. 1723)

12. **In the Navy there are 2 appointments to the grade of rear admiral (list begins with Ronald C. Copley)** (Reference No. 1725)
13. **In the Navy there are 3 appointments to the grade of rear admiral (list begins with Brian K. Corey)** (Reference No. 1726)
14. **RADM(lh) Darse E. Crandall, USN to be rear admiral** (Reference No. 1727)
15. **In the Navy there are 2 appointments to the grade of rear admiral (lower half) (list begins with Kristen B. Fabry)** (Reference No. 1729)
16. **In the Navy there are 3 appointments to the grade of rear admiral (lower half) (list begins with Heidi K. Berg)** (Reference No. 1732)
17. **Capt. John J. Adametz, USN to be rear admiral (lower half)** (Reference No. 1733)
18. **Capt. Thomas J. Anderson, USN to be rear admiral (lower half)** (Reference No. 1734)
19. **In the Navy there are 19 appointments to the grade of rear admiral (lower half) (list begins with James A. Aiken)** (Reference No. 1735)
20. In the Navy there are 11 appointments to the grade of lieutenant commander (list begins with Nana K. Appiawiah) (Reference No. 1741)
21. In the Army there is 1 appointment to the grade of lieutenant colonel (Tia W. Caphart) (Reference No. 1753)
22. In the Army there is 1 appointment to the grade of lieutenant colonel (Napoleon A. Campos) (Reference No. 1754)
23. In the Army Reserve there is 1 appointment to the grade of colonel (Kevin R. Embry) (Reference No. 1755)
24. In the Army Reserve there is 1 appointment to the grade of colonel (Andrew J. Furjanic) (Reference No. 1756)
25. In the Army there is 1 appointment to the grade of colonel (Daniel L. Lee) (Reference No. 1757)
26. In the Army there is 1 appointment to the grade of colonel (John M. Williams) (Reference No. 1758)
27. **General Terrence J. O'Shaughnessy, USAF to be general and Commander, US Northern Command/Commander, North America Aerospace Defense Command** (Reference No. 1770)
28. **Col. Michael T. Gerock, ANG to be brigadier general** (Reference No. 1771)
29. **MG Stephen G. Fogarty, USA to be lieutenant general and Commanding General, US Army Cyber Command** (Reference No. 1772)
30. **BG Raymond S. Dingle, USA to be major general** (Reference No. 1774)
31. **MG Francis M. Beaudette, USA to be lieutenant general and Commanding General, US Army Special Operations Command** (Reference No. 1775)
32. **In the Army Reserve there are 16 appointments to the grade of major general and below (list begins with Eugene J. LeBoeuf)** (Reference No. 1776)
33. **Admiral Philip S. Davidson, USN to be admiral and Commander, US Pacific Command** (Reference No. 1777)
34. **RADM David M. Kriete, USN to be vice admiral and Deputy Commander, US Strategic Command** (Reference No. 1778)
35. **RADM(lh) Michelle C. Skubic, USN to be rear admiral** (Reference No. 1781)
36. **In the Navy there are 14 appointments to the grade of rear admiral (list begins with Eugene H. Black III)** (Reference No. 1782)
37. **RADM(lh) Brent W. Scott, USN to be Chief of Chaplains of the Navy** (Reference No. 1783)
38. **Capt. Darin K. Via, USN to be rear admiral (lower half)** (Reference No. 1784)
39. **LTG Michael G. Dana, USMC to be lieutenant general and Director, Marine Corps Staff** (Reference No. 1785)
40. **LTG David H. Berger, USMC to be lieutenant general and Deputy Commandant for Combat Development and Integration, Headquarters, US Marine Corps** (Reference No. 1786)
41. **In the Marine Corps there are 8 appointments to the grade of brigadier general (list begins with Stephen E. Liszewski)** (Reference No. 1787)
42. In the Air Force Reserve there are 65 appointments to the grade of colonel (list begins with Michael J. Abbott) (Reference No. 1788)
43. In the Army there is 1 appointment to the grade of major (Roberto Sorianoolivas) (Reference No. 1789)

44. In the Army there is 1 appointment to the grade of major (Jason Palatas) (Reference No. 1790)
45. In the Army there are 2 appointments to the grade of major (list begins with Jose R. Reveles, Jr.) (Reference No. 1791)
46. In the Army there is 1 appointment to the grade of lieutenant colonel (D012279) (Reference No. 1792)
47. In the Army there is 1 appointment to the grade of major (Russell B. Gilliland) (Reference No. 1793)
48. In the Army there is 1 appointment to the grade of colonel (Erik M. Bauer) (Reference No. 1794)
49. In the Army there is 1 appointment to the grade of colonel (Lawrence W. Henry) (Reference No. 1795)
50. In the Army there is 1 appointment to the grade of lieutenant colonel (Kenneth A. Willeford) (Reference No. 1796)
51. In the Army there is 1 appointment to the grade of lieutenant colonel (D012941) (Reference No. 1797)
52. In the Army there is 1 appointment to the grade of major (Roxanne T. Sickles) (Reference No. 1798)
53. In the Marine Corps there is 1 appointment to the grade of lieutenant colonel (Chad R. Fitzgerald) (Reference No. 1799)
54. **MG Charles G. Chiarotti, USMC to be lieutenant general and Deputy Commandant, Installations and Logistics** (Reference No. 1813)
55. In the Army Reserve there is 1 appointment to the grade of colonel (James F. Huggins II) (Reference No. 1814)
56. In the Army Reserve there is 1 appointment to the grade of colonel (Denny L. Rozenberg) (Reference No. 1817)

TOTAL: 256

About a month ago, several of us on this committee, Senator Ernst, Senator Rounds, Senator Sullivan, myself, and also a couple of members from the House Armed Services Committee were in the South China Sea. It is kind of hard to convince the American people that our image in that area is not really up and equal to China's image. We all know about what has happened in terms of the islands that they have created, and they are up over 3,000 acres right now. It is all as if they are preparing for World War III, and those words came from our allies over there, not from me. It is pretty frightening when you see some seven islands that were illegally created and have nothing except really military equipment, cannons, and all of that.

And so we are finding allies that we have there, and we talked to all of them, the Philippines, South Korea, Taiwan, Japan. It is almost as if they are taking sides. Who shall it be? China or the United States? Whether we like it or not, that is our current image there, and I am really concerned about giving some kind of assurance to our allies that we are being prepared in a different way that may not be visible now.

Do you have any thoughts about that, Secretary Wilson, about reassuring our allies over there that we are in the game?

Dr. WILSON. Mr. Chairman, our responsibility is to be strategically predictable to our allies and to be there and to be operationally unpredictable to our adversaries.

The Chief and I went to the Pacific to the Philippines, South Korea, Japan. The Chief then went on to India.

Senator INHOFE. When was this?

Dr. WILSON. In January to reassure them. Last week, we had a Five Eyes meeting, as well as meetings with the Japanese, the French, the Norwegians, and others about our space partnerships

and opened up our space schoolhouse to more allies and partners. We are stronger together than we are alone.

I do not know if the Chief wants to talk a little more about our operational partnerships.

Senator INHOFE. And, Chief, what I am getting at here is the image that we have over there, which I am sure you saw at the same time that you were there.

General GOLDFEIN. Yes, sir. And what I will tell you is that a big part of the air component story in the Indo-Pacific region is the stability of our forces over time. If you take a look at the drastic reductions that we have taken over time across the Air Force, where we have had to pull forces is primarily from CONUS [Continental United States], or here in the United States, and in Europe where we have come down significantly over the years. If you look at where we are in the Pacific, it has actually been fairly stable over time. And so our commitment to our fellow air chiefs there and how we exercise, how we operate, whether that is on the Korean Peninsula or throughout the region, has remained stable, and I project it will remain stable over time. Then with this increased budget, it gives us an opportunity to further reinforce that air component solidarity with our allies and partners there in the region.

Senator INHOFE. I think that is significant, and I appreciate that very much. I wanted to get that on record.

Senator Reed mentioned several of the vehicles that are out there that we are modernizing right now. The one that is of greatest interest to me perhaps is the KC–46. When you stop and think about the KC–135 having endured—what—59 years, I look at this as something that is going to be probably in that same situation.

Secretary Wilson, we are anxious for the first KC–46 to get delivered to the Air Force. We understand that is going to happen this year. We have had some delays on the first delivery, and we are all very interested in that.

The President's Budget had, I think, 15 coming on board, the KC–46. Do you agree that that is an adequate number, an achievable number, and a desirable number?

Dr. WILSON. Yes, sir. I think that is a desirable number.

We have had meetings with Boeing and additional meetings last week to get an agreement on a schedule. We believe, the Air Force believes, that the schedule that Boeing has is still overly ambitious, and we would like to get agreement on a delivery date and drive to that delivery date.

Senator INHOFE. What do you think about the President's Budget having 15 in it, General Goldfein?

General GOLDFEIN. Sir, also I agree with the Secretary that it is absolutely a desirable number and a sustained number over time as we bring that weapon system on. As you know, I would offer that we are a global power because of our global reach, and it is all the services that rely on that tanker force and our allies and partners to be able to project power globally. So it is a critical capability that we need to bring on as fast as we can bring it on.

Senator INHOFE. Agreed. Thank you.

Senator Reed?

Senator REED. Well, thank you very much, Mr. Chairman.

First, let me note that I had the opportunity to go down and visit the B–21 facilities in Florida and was very impressed with the management, both the Air Force and the contractor. I know you are paying quite a deal of attention to that, and thank you for your efforts in that regard.

I want to go back to the JSTARS issue I raised. My sense of the back and forth—and it has been over several years. So this is not a recent development—is that originally the aircraft was going to be retired without replacement, and then Congress said no. Then the Air Force came back with a modernization plan for a business jet with a radar and then went into a source solicitation process for that. Then now in 2019, the proposal is they canceled that solicitation and pursued another path. And some rationale has been the National Defense Strategy, but we got a sense that this was going to be the 2019 proposal even before the NDS came out.

So either the Secretary or the Chief of Staff, can you give us some ideas about what is going on?

Dr. WILSON. Senator, we were working on the National Defense Strategy for about 9 months before it was published, and I think the last version that I saw had version 67 on it. So we understood the direction we were going to be guided to go before it was actually published in January. So it did influence our fiscal year 2019 budget submission.

There are several things that have changed. And I was on the National Security Council staff in 1991 when JSTARS was a new invention. We pushed it forward into the fight when Saddam Hussein invaded Kuwait, and it was a transformative capability. But in 1991, I did not have a cell phone. Nobody in this room had a cell phone, and technology was different. So is the threat.

So the threat is changing and we have been guided to say what do we need to do in a contested environment to support the ground operators because that is what this is about. We know that it will not survive close to the battle area. It looks forward about a couple hundred miles onto the ground to look at what troops are amassing out there to attack us.

So we asked them to see if they could come up with a better way to solve the problem. The proposal we put forward integrates multiple sensors, space, air, manned, unmanned, ground, fuses that data instead of having one aircraft doing a loop close to the battle area. We also know that we can keep JSTARS. We have looked at the airframes. We think we can keep them a little longer than we thought. That opens this opportunity. We will extend and bring back some AWACS [Airborne Early Warning & Control] to help as well, and they are a little further off from the forward edge of the battle area. We had the engineers come in and scrub this plan so that the technology readiness level is high. We think this is a better answer, and that is why we put it forward in the budget.

Senator REED. General Goldfein, your comments, please.

General GOLDFEIN. Yes, sir. First, I would like to make sure that there is no question in anybody's mind that we are committed to staying shoulder to shoulder with Army, Navy, Marine Corps as we continue to look at the fight in the future. I have been fighting side by side with the Army my entire career, and it is my obligation I believe, as the Secretary organized train and equip, to ensure that

any soldier, sailor, marine, airman who are on the ground who hear jet noise—I never want them to look up. I want them to know it is us, and we owe that to them.

So this is about ensuring that we understand the problem that we have to solve, and the problem, as the Secretary has laid out, is that we have to simultaneously be able to provide a common ground picture to an individual on the ground of enemy movement in both a contested and a non-contested environment. And we do not have the luxury of doing it either/or.

And so given that challenge, we went and looked at original assumptions. And you asked what has changed that caused us to change. The Secretary laid this out. The most fundamental change is when we did a deep dive into the fuselage, we learned that we can fly the current frame through the mid to late 2020s, 2028. So the fundamental assumption we started with was that these airplanes were going to stop flying in 2018. So we had to solve the platform problem with a platform solution. That gave us time to step back and say is this the best plan to be able to solve both the contested and uncontested because we do not want someone in a contested environment on the ground, which is where we will be, to be blind to enemy movement on day one of that campaign.

So given the fact that we can fly longer, we looked at how could we use those resources in a different way to be able to provide that ground moving target and the battle management simultaneously for both Yemen and Kaliningrad. The best way forward for us is to move into a multi-domain sensing capability that uses space, leverages where commercial space is going, leverages every platform that we are building as a joint team that does ground moving target indicator, or GMTI [Ground Moving Target Indicator], and look at disaggregated command and control.

And so the plan we moved forward allows us to keep the current capacity through 2028, possibly longer, and gives us 10 years now to build a multi-domain capability to be able to fill in the gaps. The gap that we have got to fill is that Kaliningrad, China campaign gap in a contested environment.

Senator REED. Just quickly because my time has expired. I understand that. It is a very logical presentation. But we are starting now with a new concept and we are at the very beginning stages of trying to develop the many different parts. Is that fair?

General GOLDFEIN. I will just say that here is one of the things that we are able to do. Previously we were going to retire seven E–3 AWACS. This allows us to not only bring those airplanes up but to modify them so we can get top secret feeds into AWACS so they can start getting feeds from all kinds of different platforms and capabilities to do that battle management. Every airplane and every platform the joint force is building that has an electronically scanned radar does that business. And so we have access to more capability.

The other thing we are going to do is we are going to take MQ–9's and build a GMTI capability on MQ–9's. So a soldier now will have the capability that he does not have today to find, fix, and finish on a single platform based on being able to see movement, put a sensor against it, validate it, fix it, and destroy it with weapons on the wing. So to the soldier on the ground, this is going to be

transparent to them. The soldier on the ground in a contested environment is going to be served by the better plan.

Senator REED. Thank you very much.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Reed.

Senator Wicker?

Senator WICKER. Thank you.

Thank you for a bit more optimistic report than we have had in the past years.

Let me talk about a problem we still have, the pilot shortage problem in the Air Force, the pilot shortage problem generally, and also pilot training.

It has been estimated that there is approximately a 2,000 pilot shortage in the Air Force, including 950 fighter pilots. Boeing reports that North America will need 117,000 more pilots over the next 20 years.

So what are we doing about this? Are we going to max out the UPT [Undergraduate Pilot Training] bases? And what about this somewhat controversial proposal to add a new contractor-run undergraduate pilot training facility? Do you want to start first, Madam Secretary?

Dr. WILSON. Senator, I will.

You are right that there is a national shortage of pilots. The airlines are going to be hiring over 4,500 pilots a year for the foreseeable future, and they cannot hire anyone for the airlines who have less than 1,500 hours of flying time or 750 hours with the Air Force. There is an inverse relationship between hiring in the airlines and retention in the services. We are going to have to face that challenge.

We are facing it in three different ways.

The first is to validate our requirements, how many pilots do we really need, and really scrub those numbers.

The second is we are trying to do everything we can to retain the pilots we have with quality of service, quality of life, reducing the operating tempo, giving them more choice and options to be able to manage their own careers so that we keep more pilots on Active Duty. They came to serve. So there are ways to increase retention but retention cannot be the only answer.

Third is we have to increase the number of pilots we are training. The first step is to maximize the capacity of the pilot training bases that we have. We trained about 1,100 pilots last year I think was the number. The maximum capacity of our current infrastructure is about 1,400 pilots a year.

Senator WICKER. So that is three UPT bases?

Dr. WILSON. Yes, sir. Shepherd—the current UPT bases we have—it is about 1,400. And it is to do with the airspace, training ranges, runways, ramp space. But it is about 1,400.

When you get beyond that, we are looking at whether we should have some flexibility with some contractor undergraduate pilot training, and we are looking at that option. It gives us the ability to increase for a bit and to recover faster and also to ramp back down without affecting the indigenous Air Force capability. So it is an option that we are looking at.

Chief?

General GOLDFEIN. Sir, I will just add that as we look at this, as you might imagine, we have been out eyeball to eyeball with our pilot force listening to them, squinting with our ears to make sure we understand what are those actions that we could take that would keep them in the Air Force because the part we cannot control is the overall problem statement, and that is that we as a nation do not produce the pilots we need to adequately service business, commercial, and military aviation. That is a national challenge. We cannot control that.

But what we can control are those things that we do within the service. And as the Secretary laid out, it is about increasing production. It is about increasing retention through quality of service and quality of life initiatives, and it is about ensuring that we understand with great fidelity the data that drives the requirement for pilots to go to do the nation's business.

Senator WICKER. General, on that last statement—and that follows up what the Secretary said about validating the requirement. Are you saying that the requirement might not quite be 2,000 pilots and it might not quite be 950 pilots? Is that what you are saying?

General GOLDFEIN. No, sir. What I am saying is that where we actually place pilots—because to have a healthy and mature weapon system, you have to have enough pilots that actually fly the aircraft.

Senator WICKER. Okay, well, are you pretty sure that we are in the ballpark on a 2,000 pilot shortage?

General GOLDFEIN. Yes.

Senator WICKER. Do we need to be part of a larger conversation with industry and frankly with our allies about the international pilot shortage? Yes, ma'am.

Dr. WILSON. Sir, I think we do. This is a national shortage. I would say that the only pathway for someone outside of the military to get into the airlines—I mean, there are very few of them—crop dusting, flight instructing, or going overseas and flying with a foreign commercial carrier because they do not have the 1,500-hour requirement.

Senator WICKER. Thank you.

Senator INHOFE. Thank you, Senator Wicker.

Senator Shaheen?

Senator SHAHEEN. Thank you, Mr. Chairman.

Since we are talking about pilots, I was struck by the news coverage of the Southwest problem last week with its engine and the pilot did such a terrific job. And one of the pieces of that news story was that she had hoped to join the Air Force and had wound up joining the Navy because the Air Force was not as open to women. I assume that is no longer a problem.

Dr. WILSON. Senator, I came into the Air Force at about the same time. The Navy opened fighter pilots flying to women earlier than the Air Force, but they could not fly in combat. And I was also part of the effort to change that law back in 1991.

Senator SHAHEEN. Thank you very much. I appreciate that. I thought it was important to make that point.

I want to thank you, Secretary Wilson, for taking time to meet with me last week and for the responsiveness of the Air Force to

the issue we have at the former Pease Air Force Base with perfluorinated carbon, or PFCs, which have affected the groundwater. It is an issue not just in New Hampshire but at military installations across this country.

And I also appreciated Assistant Secretary Henderson coming up and meeting with folks in the community. As you know, through the defense bill last year, the authorization and through the appropriation in the omnibus, we have funding for a health study that is going to be done by the Agency for Toxic Substances and Disease Registry through the CDC. And I just wanted to urge you to do everything you can to make sure that that funding gets transferred as expeditiously as possible. We have 1,500 people who have been tested with elevated levels in the Portsmouth area who are anxious about their future and their children's future. And I know there are many people throughout the Air Force and our other military installations who share that concern.

Dr. WILSON. Senator, we will work with you and with HHS, as well as CDC, to make sure that study is done.

Senator SHAHEEN. Thank you very much.

You talked about the bold new move, one of which was accelerating defendable space. General Hyten testified at a recent STRATCOM posture hearing regarding his view that the U.S. military should eventually stand up a separate branch for space domain but that now is not the right time to do so. Do you share that view, or do you feel differently about it?

Dr. WILSON. Senator, I feel that the United States is the best in the world at space, and our adversaries know it and they will seek—I know they are developing the capabilities to deny us the ability to freely operate in space in crisis or war. This budget reflects an alignment of the American leadership. The President has set out a National Security Strategy and a National Space Strategy, restarted the Space Council, which the Vice President is chairing. The Secretary of Defense and the Air Force are all aligned on the need to accelerate capabilities which are here in the President's Budget. We are building a more lethal and more agile force, and I think this fiscal year 2019 budget has a significant commitment to being able to defend ourselves on orbit.

Senator SHAHEEN. So does that mean you think we do not need to set up a separate space force, at least in the foreseeable future?

Dr. WILSON. Senator, we are open to discussing ideas that people have in this realm. I think the most important thing is not the organization but what we actually do and that is to defend ourselves on orbit and make clear to any adversary that if they take us on in space, we will prevail.

Senator SHAHEEN. And is there a role for our National Guard in the space domain?

Dr. WILSON. Senator, we have National Guard units that are involved in aspects of space, as well as Reserves.

Senator SHAHEEN. Thank you.

General Goldfein, you were talking about our efforts in Kaliningrad. And I know one of the things that our European allies are very interested in is our support for the European Deterrence Initiative. Can you talk about what more the Air Force is doing to support that initiative?

General GOLDFEIN. Yes, sir. We talked earlier a little bit about our stable presence in the Pacific. The air component story in Europe is actually slightly different. We have taken down significantly over time. And we as an Air Force have gotten so much smaller over time. I mean, if I had been the Chief in 1991 with the Secretary, we would be talking to an Air Force of just shy of a million Active, Guard, Reserve, and civilians. And just to give you one force element, 134 fighter squadrons. Today we have 56 total and 670,000. So a lot of that reduction came in Europe.

And so with this smaller force, the European Defense Initiative from the air component perspective has been an investment in access and basing so we can take this smaller force and push it forward very quickly to compete, deter, and then win, if required, working side by side with our NATO allies. So that is why you have seen so much investment in basing, so much investment in infrastructure as our part of EDI, and I think as we go forward, you will see that continue.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Shaheen.

Senator Fischer?

Senator FISCHER. Thank you, Mr. Chairman.

General, the RC–135 is the latest in a family of platforms that have served as the backbone of the Air Force's manned ISR mission since 1962. And I am very proud that Nebraska's 55th Air Wing at Offutt Air Force Base is the home of this very unique mission. And as we race to match the pace of new threats, it is critical that we adequately fund this aircraft.

The fiscal year 2019 Air Force budget requests funds to make upgrades to the platform. And how have global threats generated a need for this capability?

General GOLDFEIN. Yes, ma'am. Thank you.

Not only is it a critical capability, as you know, it is a critical capability for our allies. And we share this with the United Kingdom who has this capability as well. So we are finding that this particular capability, without going into the operational details on what happens on that airplane, as we look at peer threats and the return to great power competition, our ability to understand the global picture to be able to ensure that we understand more than our adversaries and can then decide and act in ways that can produce dilemmas for our adversaries and enhance 21st Century deterrence, the RC–135 is central to that effort and it will remain so.

Senator FISCHER. You mentioned it is important for our allies. What about our combatant commanders? What do you hear from them?

General GOLDFEIN. Same. As a matter of fact, the demand signal for RC–135 and its capabilities are going up, especially as we look at the peer competitors, the China, the Russia threats, when we look at our posture vice Iran, North Korea. And it has been very successful in our fight against violent extremism. So it actually works across the spectrum of conflict.

Senator FISCHER. You have also requested funds to convert three KC–135R aerial refueling tankers into a specialized WC–135R air-

craft used to detect evidence of nuclear detonations. And how will this conversion, I guess, help to improve the WC–135R mission?

General GOLDFEIN. It allows us to give more time to be able to continue to accomplish this mission because the current airplanes are old. They are wearing out. Our mission-capable rates and, more importantly, our aircraft availability rates to be able to do this mission are much lower than not only the Secretary of Defense but the combatant commanders require under that mission. So being able to convert this into the KC–135 gives us more longevity for that critical mission.

Senator FISCHER. Thank you.

And I would also like to thank the dedicated men and women that we have at the 55th wing and the missions that they perform.

Madam Secretary, the Air Force's physical infrastructure is essential to the lethality and the readiness of our nation's forces, both key goals of the NDS. Put simply, maintaining readiness means maintaining our runways. Unfortunately, there are several instances where Air Force installations are operating with runways in increasing states of deterioration and in need of substantial repair. Offutt in my home State of Nebraska is one such example. And while I am encouraged that the Air Force is working on a planned solution, I do worry about this in a systemic sense as an issue.

To what degree do you believe the Air Force is experiencing a larger runway maintenance problem?

Dr. WILSON. Senator, I have actually stood on that runway and seen some of the problems with the concrete there. And it did not last to the extent it was supposed to. And as the engineers there know and as you know, there were problems in the way they built that runway, and it is going to have to be replaced earlier than it should have been. We do not see that as a systemic problem across the Air Force. I think it was a problem with that contractor.

Senator FISCHER. I thank you for your interest and your commitment to the runway at Offutt. And I thank you for coming to stand on the runway. It is important to see that firsthand, the issues that our airmen are facing there.

What system do you have in place to monitor the risk that is posed to installations, though, as a result of any kind of degradation to the runways?

Dr. WILSON. Senator, we have civil engineers who are at our bases who monitor the condition of the runways and other critical facilities.

Senator FISCHER. Do you believe that is sufficient to mitigate any risk?

Dr. WILSON. Senator, I do, but I can also kind of take that for the record and go back and push on that a little bit, if you would like me to.

[The information referred to follows:]

Dr. WILSON. The Air Force has several systems in place which work in tandem to assess and track the condition of airfield pavements, predict current and future degradation, identify current and future requirements.

These systems include:

a. Airfield Pavement Evaluations Team: Performs complete assessments providing Pavement Condition Index and Structural evaluation every 12 years and complete Pavement Condition Index every 4 years (via contract) for Active Duty airfields. The

Airfield Pavement Evaluation Team presents reports documenting the condition and recommending maintenance/repair requirements to the installations and enters findings into the database of record (PAVER).

b. PAVER Sustainment Management System: Department of Defense mandated software system that uses assessment data collected by the Airfield Pavement Evaluation Teams and contractors to catalog airfield condition in detail; to include pavement section, predict future condition, identify current requirements, and predict future (out year) airfield requirements.

c. Transportation Network & Airfield Pavements Activity Management Plan and its pavement Sub-Activity Management Plans: Uses assessment data and PAVER products to manage the activity (airfields), identify & prioritize requirements, and predict future needs. The Air Force uses PAVER information to develop a risk-based integrated list of airfield priorities, which is coordinated with installation civil engineers and Major Command staffs.

d. Base Civil Engineer Squadron and Airfield Manager: Works in concert to monitor all aspects of the airfield continuously and identify future requirements.

Senator FISCHER. Okay. I thank you very much, and I appreciate your support for us. Thank you.

Senator INHOFE. Thank you, Senator Fischer.

Senator Heinrich?

Senator HEINRICH. Thank you, Chairman.

Secretary Wilson, General Goldfein, welcome to you both.

I wanted to ask you a little bit about the plans by the Air Force to divest of its HH–60G Pave Hawks as the new Whiskey models become available. The entire New Mexico delegation wrote to you a few months ago and expressed support for transitioning some of those legacy helicopters to the 150th Special Operations Wing. Doing so would help the Air Force with pilot production but also help alleviate the stress on the 58th Special Operations Wing to train both the legacy and the new airframes.

So as the Air Force upgrades to the HH–50W combat rescue helicopter, would you agree that an interim location using the legacy airframe would be beneficial to that transition? For either of you.

General GOLDFEIN. Yes, sir. We appreciate that option and we are looking into it. So we do agree.

Senator HEINRICH. I would very appreciate it if you would look at the New Mexico Air National Guard as having the potential to fill that role.

Secretary Wilson, I was really encouraged to see the Air Force prioritization on modernization in this year's budget. It is a very welcome focus.

I am, however, concerned that it is not necessarily adequately reflected in the basic and applied research accounts, which is really the foundation for a lot of the defense labs. So the fiscal year 2019 budget request increases RDT&E by almost 19 percent, but the basic and applied research lines stayed pretty flat.

Do you think we are putting enough emphasis right now on basic and applied research?

Dr. WILSON. Senator, I actually share your concern. Our research, development, test, and evaluation did go up significantly in this budget, but it is more on the test and evaluation end of things. We have a science and technology strategy review underway to help identify what are the areas where the Air Force needs to focus for the future and how can we best conduct that research. We expect that review to be done this fall and into the end of the year, and that will help guide us with the future.

Senator HEINRICH. I am very happy to see the focus on RDT&E. I just worry that if we do not pay attention to that foundation that it is going to catch up to us.

One of the other things I wanted to ask your opinion on, Secretary, I have long been an advocate for a more resilient and responsive space architecture that allows us to move faster and counter threats that we are facing in the current environment. So I was incredibly pleased to see that the Space Rapid Capabilities Office received such priority in resources in this year's budget request.

Can you just talk a little bit about the importance of this newly designated office, Space Rapid Capabilities, and how it is going to contribute to our nation's resilience and fit into the overall architecture?

Dr. WILSON. Senator, the Operationally Responsive Space Office has been renamed the Space RCO. There are four different satellites that that office is working on now.

But I think even more than just renaming the office, we have been going through a series of sprints with the Space and Missile Systems Center since December of 2 and 3 weeks in duration to look at how do we buy satellite systems, how do we need to change the way in which we buy satellite systems. There are a number of results of that work, but one of them will be to robust or strengthen the Space Rapid Capabilities Office to be able to drive forward on prototyping and rapid responses to combatant commander needs.

Senator HEINRICH. Great.

General Goldfein, I wanted to ask you a little bit about light attack aircraft. You recently announced that the Air Force will undergo another experiment at Holliman this year rather than the originally planned combat demonstration. How is this experiment going to be different than the one conducted at Holliman last year?

General GOLDFEIN. Sir, three ways.

Number one, we are taking a really deep dive on this one on the sustainment aspects of it, how many maintainers we need, how we sustain them both at home and forward. We determined that we could actually get a better outcome by not doing a combat experience downrange but doing an experiment at Holliman Air Force Base like we did the last time.

Second, we are looking at this through the lens of allies and partners because a big part of the light attack experiment is a common architecture and information and intelligence sharing network so that those who would join us would be able to be part of the counter-violence, the campaign against violent extremism.

The third thing that we are looking at is how do we integrate this particular weapon system in ways that allows us to get to a price point where those that we are affecting in the fight against violent extremism for the long term, that we are able to do that in the $2,000 per flying hour range over time as opposed to the $20,000, $30,000, $40,000 per flying hour range. Given the fact that we are going to be in this for a long time, it is why it has been in the National Defense Strategy.

So as we go look at this, we are hopeful that we will get the outcomes that will allow us possibly to come back to you and look at

even accelerating this to the left if, in fact, we think that is worth pursuing.

Senator HEINRICH. I look forward to that. It has taken quite a long time to get this moving. So we are looking forward to seeing that capability fielded.

Thank you, Chairman.

Senator INHOFE. Thank you, Senator Heinrich.

Senator Rounds?

Senator ROUNDS. Thank you, Mr. Chairman.

Secretary Wilson, General Goldfein, first of all, thank you for your service to our country.

Secretary Wilson, you said that if you currently have a bomber base, you will be getting the B–21. We are very happy with that decision, and we are looking forward to getting the B–21 at Ellsworth Air Force Base. The aircraft is expected to arrive in the mid-2020s, which is only about 7 years away. To prepare for the arrival, there are significant amounts of work that have to be completed. The MILCON work that would have to be done is going to take some time.

I have just got a couple of questions with regard to what the planning is for this particular movement.

It is my understanding that the Air Force still must complete the strategic basing process in order to make the B–21 basing decision official. Am I correct in that assumption? When would this be done?

Dr. WILSON. Senator, you are correct that if you have a bomber base now, you will have a bomber base in the future. We expect a minimum of 100 B–21's, as a minimum. The rest of the fleet will be B–52's. The Chief has also directed a review of the entire number of squadrons that we have of all kinds of aircraft in light of the National Defense Strategy, which should be done by the end of August.

We would not expect to move forward with a strategic basing initiative in the near term honestly because this is still 7 years out or so. If we get a validation of numbers, I suppose we could move forward earlier on it, but there is really probably not a need to move on it for another couple of years at least.

Senator ROUNDS. That is the reason for my question. It would appear to me that with the amount of work, the military construction that is going to have to be done and the fact that it is going to have to move through an appropriations process, it seems to me that there would be at some point a plan in which the MILCON would start to become a part of that process. That is really what my question is. How soon would it be before we expect to see the Air Force making recommendations with regard to MILCON activity for these improvements in those bases in order to be able to receive the B–21 in a timely fashion?

Dr. WILSON. Senator, it is not on my radar screen now for the basing actions that we expect in the near term. So the B–21 will start coming on in the mid-2020s and then there is a ramp-up after that. I will take this under advisement as to whether we should move this forward to give communities some certainty.

But I do not know. Chief, do you have anything on the bomber structure, the force structure?

General GOLDFEIN. Yes, ma'am.

So, sir, what I would just offer is that if you look at our MILCON submission in this budget, our priority starts with new mission MILCON and then we go to combatant commander critical requirements, and then we get to what we call worst first, those worst facilities that we have got to build across all of the major commands. So the top of our submission is in new mission beddown. So that is why you see MILCON going in on the F–35, MILCON going in on the KC–46. So the process that we use to align that MILCON with new mission to ensure that it is in place before the aircraft arrive because you have got to go do the maintenance and sustainment of the weapon system before you actually operate it, that same process will be used for the B–21.

Senator ROUNDS. So what I am hearing you say is that because of the time frame and you have got other items such as the 135 that has got to bed down first, and that is where your priority is going to be or the next couple years with regard to the MILCON mission. Am I saying that correctly?

Dr. WILSON. Senator, we generally do not plan MILCON outside of the 5-year window. And so this is for us beyond the 5-year window of where we would be planning.

Senator ROUNDS. Today just now, once again, we have used the term that we would have a minimum of 100 B–21's, or at least that is the structure today. Is it not about time that we really started talking about what our needs are and about what the real discussion should be?

I understand that when we are talking about 100 aircraft, there is a cost involved because on a per-copy basis, the more you build, the less expensive per copy it can become. The sooner you have certainty with regard to that, perhaps the better off we all are in terms of how we budget for it. Is it not fair to say that under most analyses that have been done, we are somewhere between 170 and 200 B–21's or at least that number of bombers necessary to fulfill the missions as you currently understand them?

General GOLDFEIN. Yes, sir. That is why I have directed the study that will be done by August on exactly what the size of the Air Force needs to be, bombers, fighters, command and control, personnel recovery, all those elements that we bring to do the missions of the Air Force.

The National Defense Strategy—the Secretary said we were on version 67. We had folks that were helping the Secretary of Defense with the writing of that document. We were getting periodic updates, and we were looking at the 2019 budget throughout that time frame.

As we look forward to the future, we owe you now what the size of the Air Force needs to be to be able to accomplish the National Defense Strategy tasks, and that is where we will come back to you with telling you what the requirement is for the force of bombers we need. Right now, what we know is the minimum is 100. I fully expect that the requirement is going to be above that.

Senator ROUNDS. Let me, just for the record, ask you once again just so that I understand it. When would you expect to be able to come back to the committee with a recommendation as to what our force should look like?

General GOLDFEIN. Our plan is to do that by August.

Senator ROUNDS. Thank you.

Thank you, Mr. Chairman. My time has expired.

Senator INHOFE. Thank you, Senator Rounds.

Senator Peters?

Senator PETERS. Thank you, Mr. Chairman.

To our witnesses, thank you for your testimony here today as always.

Secretary Wilson, when you appeared before this committee in December, you said you are—and I am going to quote you here—a big fan of the A–10, which I certainly like to hear. But I am concerned because a significant number of A–10's will have to be grounded unless they receive new wings. So that is a big concern. The Air Force's fiscal year 2019 budget request included $80 million for additional wing sets for the A–10. But last week in the Airland Subcommittee, we heard testimony that the Air Force has only committed to maintaining a minimum of six of the nine A–10 squadrons through 2032.

Secretary Wilson, could you please clarify the Air Force's intent for the future of the A–10, and has there been a decision made to reduce from nine to six?

Dr. WILSON. Senator, there has been no decision to reduce from nine to six. The current fiscal year's budget includes the funds to restart the line for the rewinging of the A–10 and to buy the first four wing sets. The fiscal year 2019 proposal has $80 million, which should get us somewhere between 8 and 12 additional wing sets. Earlier this week, I asked our acquisition folks to see whether that production can be accelerated for delivery so that we do not have groundings, and they are taking a look at that. But there has been no decision made to reduce the number of A–10 squadrons.

Senator PETERS. Is that decision based on current funding, or will you require additional appropriations in fiscal year 2019 above the budget request for the A–10?

Dr. WILSON. Senator, we have the money in the budget request I think for between 8 and 12 additional wing sets. We have not gotten the final proposals and made a decision to be able to analyze how many wing sets per year is the maximum that industry could produce, but I may be able to get that information to you.

Senator PETERS. I would appreciate that, if you could, Secretary.

Dr. WILSON. Yes, sir.

Senator PETERS. You mentioned the contract. Could you please provide an update on the competition for the A–10 wing contract? I know there were some issues in the supply chain. Do you expect any issues in the industrial base to delay this program?

Dr. WILSON. Senator, I do not expect any now, but it is a good example of supply chain problems. The prime contractor for the A–10 no longer exists. North American was the aircraft producer at the time. There are, as I understand it, 102,000 parts on an A–10 wing. So I do not know how many of those are different part types, but I am hoping a lot of them are the same rivet. But it is a complicated wing.

Senator PETERS. Right.

With disruptive technologies making it easier and less expensive to put satellites in orbit, we are likely to see the beginning of a sat-

ellite boom. Several companies have applied for and received licenses to launch large satellite constellations in the next 20 years. Recently, as you know, SpaceX was approved to launch a constellation of more than 4,000 satellites to provide rural broadband, certainly a very important issue for the United States, but one particularly important for me and for northern Michigan in the upper peninsula of Michigan. But needless to say, space situational awareness or space traffic management is going to become far more complicated in the upcoming years.

Recently Vice President Pence, as the head of the National Space Council, announced that the Department of Commerce will become responsible for a basic level of space situational awareness using data provided by the Air Force. However, I am personally concerned that the orbital debris regulatory landscape is already extremely complicated, and adding a new organization in the Department of Commerce would probably only add to that complexity.

So my question to either one of you is, what steps do you recommend to improve our whole-of-government approach to space situational awareness? What role specifically should the Air Force play, and what other agencies and departments do you want to see in leading roles?

Dr. WILSON. Senator, a number of questions there.

The Air Force has been doing notification of possible collisions in space since the 1950s, not only for the United States but for the world and for companies. We track any object greater than about a softball size, and there are 20,000 of those currently orbiting the earth. Last year our group out of Annenberg, California gave notice of about 300,000 potential collisions in space.

We are increasing our space situational awareness capabilities. We have four satellites on orbit. We will put two more satellites on orbit for co-orbital space situational awareness, but we also have a ground-based system to be able to watch things and not just keep a catalogue, but to be able to see things in near real time. So if anything is moving, we figure out why, and we are able to protect our assets on orbit.

With respect to who we cooperate with, I had a meeting last week with the Secretary of Commerce. They are going to come out to our Schriever wargame this fall, and we will have a civil cell there so they can start to learn how we do this now. We are quite happy to move that to the Commerce Department and stand up their capability. The sensors will probably all come from us, but there may be some advantages to having the Commerce Department doing this as well. There are other sources of data on space situational awareness, and they may be able to do some things that, honestly, right now we just—our sensors track and we notify off of our sensors. They may be able to do some additional things based on other people's data sets, and that may be an advantage for all of us.

Senator PETERS. Thank you so much.

Senator INHOFE. Thank you, Senator Peters.

Senator Cotton?

Senator COTTON. Thank you, Mr. Chairman.

Madam Secretary, General Goldfein, thank you for being here today. I am sorry I am late. I just came from the White House ar-

rival ceremony for President Macron. I will say that your Air Force platoon performed excellently, almost as good as the Army platoon.

[Laughter.]

Senator COTTON. Secretary Wilson, we passed a 2-year budget a couple months ago and an omnibus spending bill for the rest of this year. Obviously, that has given a bit of a reprieve from the budget caps and sequestration under the Budget Control Act. However, we still have to implement the second year of that budget agreement.

Could you explain to me the impacts that continuing resolutions have had on the Air Force and why it is important that we pass a DOD appropriations bill in a timely fashion this summer?

Dr. WILSON. Yes, sir. Senator, I think that nothing has done more damage to the United States Air Force than budget uncertainty or sequester over the last decade. Certainty allows us to do things like work with industry to maximize the munitions production up to industry capacity. It allows us to sign contracts other than in the last half of the year. So probably the most important thing is industry certainty. We have not sequestered ourselves this year. We have acted as if the budget was ultimately going to be passed, but the uncertainty with industry is a major issue.

Senator COTTON. Thank you.

Then, of course, we will be back in this situation in about 18 months because the last 2 years of the Budget Control Act, fiscal years 2020 and 2021, remain. I assume that it is imperative that Congress act to eliminate those caps and the risk of sequestration for the same reasons for those two fiscal years?

Dr. WILSON. Yes, sir.

Senator COTTON. Thank you.

The Air Force's unfunded priorities list states that the ground-based strategic deterrent and long-range standoff weapon programs are both expected to run out of funding by the end of the year due to accelerated timelines. Please explain a little bit more about the acceleration of the timelines of those programs.

Dr. WILSON. Senator, they are ahead of schedule. They are making very good progress and they are ahead of schedule.

Senator COTTON. So that is a good news story then, not a bad news story.

Dr. WILSON. Yes, sir.

Senator COTTON. Thank you.

What impact, if any, would the Air Force face on these programs if it does not receive the extra funding that is identified in that unfunded priorities list?

Dr. WILSON. Senator, our unfunded priorities list this year, because of the increase in the money that the Congress appropriated in the budget deal, is actually smaller than it has ever been, at least in probably the last decade. But what we did in those unfunded priorities, which we are required by statute to provide, is accelerate things that are already in our 5-year plan. So pull more things to the left if there were an additional top line.

We are actually executing on the nuclear modernization, on the research and development phase of that faster than we thought, and that would be a good place to keep the progress going.

Senator COTTON. Thank you.

General, how many fighter aircraft does the Air Force have today?

General GOLDFEIN. Sir, currently we have 2,151 aircraft.

Senator COTTON. How many are combat-coded?

General GOLDFEIN. Approximately 75 percent of those.

Senator COTTON. A little over 1,500 then?

General GOLDFEIN. Yes.

Senator COTTON. So you are in compliance with the NDAA provision from a couple years ago——

General GOLDFEIN. We are.

Senator COTTON.—to maintain a minimum of 1,900 aircraft and 1,100 combat-coded.

Does the new National Defense Strategy have any impact on what our requirements are today for both total aircraft and combat-coded aircraft?

General GOLDFEIN. It does, and in fact, we are going to be coming back to this committee by August with our assessment of not only the number of aircraft, but more importantly, the number of squadrons that are required, not only with fighters but with fighters, bombers, command and control, personnel recovery, all those elements that are required to successfully support the National Defense Strategy.

To the previous discussion on A–10, we discussed earlier that we have gone from 134 fighter squadrons to 56. One of the reasons that the Secretary and I are looking at all of those fighter squadrons is because the last thing we want to do right now is get smaller. We need to work with this committee to get larger and make sure that we can source the number of airframes, the maintainers, the people in the squadrons we need to adequately support the strategy.

Senator COTTON. Thank you, General.

Madam Secretary, thank you for your visit to Arkansas to sit with our National Guard and Little Rock Air Force Base.

Senator INHOFE. Thank you, Senator Cotton.

Senator Hirono?

Senator HIRONO. Thank you, Mr. Chairman.

Secretary Wilson, peace and stability in the Indo-Pacific is essential. I am glad that you are paying a lot of attention to the region given its importance.

You made some recent visits to the region, which also included a stop in Hawaii where you discussed recognizing that we have returned to an era of great power competition and that adversaries in the Indo-Pacific area are rapidly modernizing and we need to keep pace in this highly contested region to ensure our national security.

From your visits, as well as your thinking about the region, being the Indo-Pacific region, what concerns you most as Secretary of the Air Force?

Dr. WILSON. Senator, what concerns me most is the pace of innovation of China and their rapid growth in their military capabilities.

Senator HIRONO. So do your budget requests reflect recognition that you have a concern and that we are stepping up in terms of our pace of modernization acquisitions?

Dr. WILSON. Senator, I think it does.

Senator HIRONO. Do you believe additional assets and investments are needed for the Air Force to maintain its competitive advantage against our adversaries in the Indo-Pacific region? If so, in what areas?

Dr. WILSON. Senator, we have put an unfunded priorities list together that would accelerate things faster. I would say that one of the things we are trying to do in the Air Force is to accelerate the pace of acquisition, to do more prototyping, more experimentation, to use the authorities that this committee has given us to get to capability faster, from the lab bench to the flight line faster. I think you have given us a lot of authorities. We now have to execute on those authorities.

Senator HIRONO. You talk about your concern, the pace of innovation of China. So in what areas are they innovating that causes you great concern? General?

General GOLDFEIN. Ma'am, I will talk first and foremost about some of the work they are doing in space. It is very aggressive. We built our space architecture in an era where space was a rather benign domain, and so as the Secretary has laid out, we are very focused and taking some bold moves in this budget to increase our ability to defend what we have in space. I would also tell you that in areas of hypersonics, in the areas of some of the game-changing technologies that we have investments in, we are also watching very clearly what China is investing in the same.

Senator HIRONO. What about Russia? Are they not investing in the space domain?

General GOLDFEIN. They are investing, but they do not have the economic base that China has to be able to advance as quickly.

Senator HIRONO. General, you are an advocate of Air Force readiness consistently testifying on its importance. I also believe in the importance of readiness for our airmen.

This March, I visited the Guard unit at Joint Base Pearl Harbor-Hickam, where I revisited a readiness challenge that I have been working on with Air Force leadership for a number of years now. The challenge involves adversary air capability. And you are nodding because I think you are familiar with the situation in Hawaii. There the Guard unit is forced to go F–22 against F–22 in many cases. Unlike other bases, Joint Base Pearl Harbor-Hickam does not have T–38's or aggressor squadrons that are there to conduct adversary air operations. I understand that the Air Force is looking at some commercial solutions for adversary air, and of course, I would like to see T–38's or other aggressors based at Joint Base Pearl Harbor-Hickam as a future goal.

But in the meantime, as you work the new contract adversary air capability, are there other solutions being considered?

General GOLDFEIN. Ma'am, primarily we are looking at this from a contract solution for Hawaii specifically. I will tell you this is a home station training challenge. When those squadrons deploy to a Red Flag to Alaska and to other areas, they are able to actually then train against a robust adversary. When they train in the simulator, they are able to train now against a rather robust adversary. This is about filling that gap for daily home station flying

training. The primary vehicle we are looking to fill that gap is through a contract.

Senator HIRONO. So you are telling me that you are making progress so that our airmen do not have to go F–22 against F–22 because that is not the way we would like to use our resources.

General GOLDFEIN. Less than optimum, yes, ma'am.

Senator HIRONO. One more question to both of you. I know you often have to wave priorities and readiness, modernization, and additional capabilities versus MILCON. In your recent MILCON fiscal year 2019 budget request, the Air Force states that MILCON investments support the combatant commanders' highest construction priorities such as the posture of forces in Europe and Indo-Pacific resiliency. I am encouraged by the prioritization of MILCON investments in the Indo-Pacific region in support of your mission.

Can you discuss very briefly the importance of MILCON investments to improve your capabilities to deter our adversaries in the Indo-Pacific region? We will just go with you, Secretary Wilson.

Dr. WILSON. Senator, I take a point, and it is a priority not just to put MILCON in the Pacific but to pursue agile basing in the Pacific and the ability to move in unpredictable ways in a crisis and disperse forces.

I would say that our budget—when we look at the actual numbers, the way things fell out, we may have overemphasized the European Defense Initiative a little bit and possibly underemphasized what we are doing in the Pacific Security Initiative a little bit. That seems to show up on the agile basing issue.

Senator HIRONO. But because of your understanding of the importance of the Indo-Asia-Pacific area to our national security, you are placing more emphasis on what we need to be doing there.

Dr. WILSON. Yes, Senator.

Senator HIRONO. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Hirono.

Senator Ernst?

Senator ERNST. Thank you, Mr. Chair. Thank you very much.

General Goldfein, thank you for mentioning Iowa, Colonel Bud Day. He is gone but will never be forgotten. He really is a true hero to so many of us.

Secretary Wilson, thank you very much for your service. It is good to have you in front of the committee.

I am going to start with an issue that has been very important to me and for our aviators, something that I continue to be concerned about, the physiological episodes that our aviators experience. It is burdening not just the Navy but our Air Force pilots as well.

In March alone, we have 12 episodes that were reported amongst the T–6 trainer aircraft fleet. Last week during the Navy hearing, Secretary Spencer provided an update to the committee on some of the efforts that the Navy and the Air Force have undertaken to solve this problem. As I told him, the fact that we have not been able to find the root cause is very disturbing.

Secretary, do you have any updates for the committee from the Air Force's perspective?

Dr. WILSON. Senator, we are working with the Navy and with NASA, as well as with different elements of the Air Force, to try to bear down on a root cause and figure these out. The most recent incidents have been with the T–6, which both the Navy and the Air Force fly. We pulled all of ours off the line, took out those systems, rebuilt the systems. We now have over 270 of them back flying, but we have experienced some other incidents.

We have, in recent weeks, set up a safety investigation board which for the Air Force has the advantage of being able to get information without consequence. We have used that mechanism in the Air Force in the past to get more information from the pilots, the maintainers, try to really figure this out.

Chief, do you want to add anything on this one?

General GOLDFEIN. Ma'am, I will just tell you just to give you a sense of how serious we took it, we stood the whole fleet down. I was involved in that discussion, as you might imagine. We just had too many that we could not connect to one particular causal effect. So when we pulled those off, we put a team of engineers, operators, physiologists, brought the Navy in, brought NASA in to really drive in. So although we have fairly high confidence that we have identified the highest brake rate items that could contribute, we do not have the smoking gun yet. We are not going to stop until we find it.

Senator ERNST. I appreciate that. I know we have talked about in the past monitoring the oxygen that is exiting the system and also perhaps what is coming out of the aviators as well. So monitoring the levels.

I know we are studying equipment and potential equipment malfunctions. You mentioned physiologists. Are we examining the pilots as well and conducting surveys of the pilots? Maybe are they drinking too much coffee in the morning, you know, just things like that? Is there something that maybe perhaps is going on outside of the realm of the equipment?

General GOLDFEIN. Yes, ma'am. I will just share with you that we learned a lot when we started the F–22 and we were having some very similar issues. And because—pilots, we all grow up and we go to the altitude chamber and we are actually deprived of oxygen so we know what our individual symptoms are. So once we recognize our individual symptoms, we know how to react.

And so when we looked at the F–22, we started with an engineering analysis of the F–22, and we were going subsystem by subsystem to try to find it. It was not until we actually looked at the entire ecosystem with the pilot as part of that system that we determined that what we were experiencing was not actually hypoxia, loss of oxygen, but actually hypocapnia, which is a completely different issue but has very similar symptoms.

So we are using the same structure of looking at the entire ecosystem of the T–6 with the pilot as a part of that system, and that is why that safety investigation board now is so important.

Senator ERNST. Very good. Again, we need to figure out the root cause of the issue looking at all aspects there.

Just very briefly, General, during our STRATCOM hearing a few weeks ago, I visited with General Hyten about the need for the United States to really articulate a new space strategy. Our last

national security space strategy was published in 2011, and the threats have exponentially increased since then.

Can you talk to us, please, about the need to update this national security space strategy?

General GOLDFEIN. Yes, ma'am. I will tell you that the Secretary mentioned the strategic alignment that we have right now from the President to the Vice President, who has stood up the National Space Council, and Secretary Wilson has been very helpful to the Vice President in that. And so from the top leadership of the nation through those of that are entrusted with the mission of space superiority, we have this strategic alignment right now, and the space strategy that the National Security Council is working its way through is going to be very important.

Senator ERNST. I appreciate it.

My time has expired. Thank you, Mr. Chair.

Senator INHOFE. Thank you, Senator Ernst.

Senator King?

Senator KING. Thank you, Mr. Chairman.

General Goldfein, I think you have acknowledged previously—and I think the Secretary has as well—the excessive operations and sustainment costs of the F–35. The recent estimate is, I think GAO said, $1 trillion over the lifecycle of the airplane. You are the largest customer on the F–35. What do we need to do to reduce those numbers? I think a specific question I would ask, could you give me a ratio of sustainment cost for an F–35 versus a fourth generation fighter? Is it twice as much, a third again as much? I just want to get a flavor of what we are talking about here.

General GOLDFEIN. Yes, sir. So I will start with the last part of the question first. So our initial estimate right now is that the sustainment costs of the F–35 are in some cases upwards of about two-thirds as much or two-thirds more than what we are finding in a fourth generation fighter. It is why you have seen me on record to say that our target for sustainment costs is equivalent to a fourth generation airplane. We want to get those sustainment costs so that it costs the same amount for an F–35 as we currently fly in an F–16 or an F–18. That is because those are the airplanes we are replacing, and those are the costs that we have funded in.

Senator KING. What I would like to ask is if you could give me for the record what you are doing to meet that goal, given the limited time we have here. But that would be very helpful. And are we making progress and how is it played out.

[The information follows:]

The Air Force continues to work closely with the Joint Program Office (JPO) and Industry to evaluate and analyze actual data to find opportunities to reduce operations and sustainment and production costs, and build better sustainment strategies. JPO's Affordability War Room is dedicated to reducing operations and sustainment costs. The affordability war room includes participants from JPO, Services, Office of Secretary of Defense, and industry. The team will provide an actionable plan for each initiative with subsequent impacts on F–35 sustainment affordability. Some specific examples of the F–35 affordability war room initiatives for cost reduction include:

a. Depot Standup
b. Spares Increase
c. Strategic Sourcing
d. Reliability and Maintainability Improvement Plan (RMIP)
e. Flight Line / Joint Technical Data
f. Electro-Optical Distributed Aperture System Reliability Improvements

You also raised the issue of the combat pilot shortage. As of October 2017, the Air Force is short approximately 2,000 pilots, including Remotely Piloted Aircraft (RPA) pilots, across the Total Force. The shortage is most acute in the fighter community, but that shortage generates second and third order effects for other pilot communities who backfill shortages from the fighter community, most notably in initial flying training and non-flying staff positions.

In order to recover from this shortage, the Air Force established the Aircrew Crisis Task Force (ACTF) in 2017 to build a comprehensive strategy to address the Air Force's pilot shortage. After studying the problem, the ACTF created a holistic approach to resolve the pilot shortage by focusing resources along three lines of effort: retention, production, and requirements. Our objective is to rebuild pilot manning to 95 percent by FY23, and so far we are on track.

The retention line of effort explores initiatives to retain pilots in service past their initial commitment. Two sub-efforts address retention through a package of talent management initiatives and compensation reform. The talent management package is designed to allow aircrew to master their primary combat duties while maintaining a sustainable work/life balance. Initiatives include rebuilding administrative support, reducing operational tempo, exploring possible technical tracks, and creating incentives for individual deployments. Compensation reform will explore transitioning from the current bonus and incentive pay structure to a professional pay structure similar to medical professionals.

In the production line of effort the Air Force recently initiated a thorough reexamination of its 30-year-old pilot training syllabus. Updating the Undergraduate Pilot Training (UPT) syllabus will transform pilot training by incorporating new learning technology, improving the quality of instruction pilots receive, and gaining efficiencies. After maximizing production at each of the Air Force's existing UPT bases, adding contract UPT will enable the service to produce approximately 100 more pilots per year. Stringent contract requirements and oversight, combined with military instruction in subsequent training, will ensure all pilots arrive at their operational unit with the same high-quality training. The potential introduction of light attack will enable higher crew manning and utilization rates over current fourth and fifth generation aircraft; providing the Air Force the opportunity to get experience for pilots more quickly.

The Air Force is constantly reviewing and managing non-flying requirements for pilots, the third line of effort, to ensure any positions out of the cockpit use and effectively complement a pilots flying training. For example, the plan realigns some staff positions to be filled with RPA pilots, which will provide them with career progression opportunities.

Senator KING. A different question. Madam Secretary, the Air Force is undergoing its first full audit. The first question, how is it going? Second question, how long do you think till we can get to a place for a clean audit?

Dr. WILSON. Senator, the audit so far is going well. The auditors are on board. The Air Force has worked up to this over the last 2 years. So we are kind of going from spring ball into the real season.

To me, the value of these audits is identifying things that we need to fix and get better. And so I would expect that it is going to be a while before the Air Force has a completely clean audit.

I would say that the things that they are identifying early on as areas of concern or areas of focus are going to be, at least initially, in real property management and accountability there. So we know we are going to have some work there. But as they identify things, we will work on them and get better.

Senator KING. I would urge you to make this a priority. We are all talking about funding and increasing funding. Some of the pressure I get back home in Maine is they are not even audited. Why should we be spending all this additional money? I am just saying, as we look forward for the next few years as we are looking toward increasing funding for what amounts to deferred maintenance in many cases, modernization, having that audit or the closer we can

get to the real audit will be a defense for you that I think is important.

Dr. WILSON. Senator, this is our first full audit this year. So we will have an audit—this is an audit for the first full year.

Senator KING. Yes, and I do not think anyone expects it to be a clean audit the first year. The Navy testified I think it would be about 4 or 5 years before they feel they are going to get to a clean audit. But I just wanted to urge you to make that a priority because I think it is part and parcel of our funding decision.

Dr. WILSON. Yes, sir.

Senator KING. It will help us to be able to provide you with the funding that you need if we can tell our constituents they are being audited and we are doing that work.

On the pilot shortage, we have got all these projections. I know it is a very serious problem. Senator Cotton and I had a meeting on that with a group of pilots.

What about the effect of UAVs? Will that mitigate the problem 5–10 years from now? I mean, autonomous automobiles are going to change the world in the next 10 years. Is there a greater role there?

Dr. WILSON. Sir, our UAVs are remotely piloted, so you still need a pilot there. We have actually recovered and put in place a recovery plan.

Senator KING. But do those pilots of UAVs have to be—they do not have to be officers and there is a different——

Dr. WILSON. Senator, for the Global Hawk, we have enlisted pilots. I would say that the pilot retention issues will be the same for enlisted or officers because they can be hired by the airlines. So we face that same issue.

We are close to recovery for the remotely piloted aircraft, and we will continue to have the need for pilots——

Senator KING. Close to recovery. You mean close to where you need to be?

Dr. WILSON. Yes, sir.

Senator KING. So UAV pilots—we are doing okay.

Dr. WILSON. Sir, we had a deficit and we recovered, and part of the way we recovered was there is an insatiable demand for intelligence, surveillance, and reconnaissance. We told the combatant commanders we can provide 60 combat air patrols a day of remotely piloted aircraft. We have got to get to recovery because we were burning out. You know, the pilots were flying remotely 6 days a week, 12 hours a day, never a break.

Senator KING. Well, let me follow up on this question, as I did on my first question. I am out of time. For the record, if you could provide a page summary of the steps being taken to remedy the pilot shortage——

Dr. WILSON. Yes, sir.

Senator KING.—what is being done, what is working, what is not working. The conclusion from the meeting that Senator Cotton and I had was that it was not necessarily about bonuses. It was more about we have got pilots that want to be pilots, and they do not necessarily want to be moved into the path toward leadership. They want to fly airplanes. So anyway, I would like to see a little write-up on exactly how you are addressing this issue.

Dr. WILSON. Senator, I am happy to.

[The information follows:]

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Senator KING. Thank you.

Thank you very much, Mr. Chairman.

Senator INHOFE. Thank you, Senator King.

Senator Sullivan?

Senator SULLIVAN. Thank you, Mr. Chairman.

I just want to first commend General Goldfein, Madam Secretary. Your leadership—I think it raises a broader issue. You know, there has been a strong bipartisan approach to national security, foreign policy nominees and confirmations. General

Goldfein, you were nominated by President Obama, and I think President Obama did a great job in nominating outstanding admirals and generals to run our military services. I think both of you are doing an outstanding job, and I just want to commend you. Madam Secretary, you have been responsive. I know you are meeting with some of my constituents tomorrow. I appreciate that.

There is a broader point here, though. I certainly hope my colleagues on both sides of the aisle here recognize this is really a historic, important tradition in the United States where Presidents put forward exceptional individuals, whether it is the Secretary of State or the Secretary of Defense. It might not have been the person we would have chosen if we were President, but they are still good people. On the issue of Mr. Pompeo, I certainly hope we do not have a really partisan vote here. That would be I think unfortunate and moving in dangerous territory.

You two are an example of an Obama nominee, a Trump nominee, strong support on both sides of the aisle, both doing an outstanding job, and I just want to commend you for that.

But I emphasize the broader point. We cannot go into the dangerous territory of full-blown partisanship when there are good people on both sides of being nominated.

Both of you know that I have taken a lot of interest in the OCONUS basing of the KC–46. General, you know that prior to your confirmation, I sent you a letter on that and got some commitments from you. Importantly, in the NDAA in both 2017 and 2018, this committee and the Congress put forward kind of characteristics that they thought would be important. I am going to review a few of those, and if you can just say yes or no. I would like to get your sense.

So on the OCONUS selection, do you think it is important, if possible, to have the KC–46's located near not just one but several COCOMs? Can you just quickly answer a yes or a no?

General GOLDFEIN. Yes.

Senator SULLIVAN. Madam Secretary, I know you are going to be part of that.

How about collocated near outstanding training facilities with joint and international partners?

Dr. WILSON. Yes, sir.

General GOLDFEIN. Absolutely.

Senator SULLIVAN. How about sufficient airfield and airspace available? I am paraphrasing the NDAA. This is the law. Two NDAAs.

Airspace availability and capacity to meet KC–46 refueling requirements?

Dr. WILSON. Yes, sir.

General GOLDFEIN. Yes.

Senator SULLIVAN. How about collocated near facilities that have runways, hangars, aircrew and maintenance operations, and very large fuel storage and distribution capabilities?

Dr. WILSON. Yes, sir.

Senator SULLIVAN. How about collocated where there are dozens, over 100, fifth generation fighters?

Dr. WILSON. Sir, I am not so sure on that one. I am not sure I would put that in a criteria for a base.

Senator SULLIVAN. For basing of air refueling aircraft? I am not talking about a base. I am just talking about the OCONUS location of the KC–46. You would not put it next to the place——

Dr. WILSON. Sir, I am not sure on that one. If somebody gave me the criteria for selection, I am not sure that one, collocation with over 100 fighters, would be one of the criteria.

Senator SULLIVAN. How about collocation to where most aircraft from the Lower 48 going to the Asia-Pacific fly over?

General GOLDFEIN. Sir, what I think what you are driving at is this idea of mission synergy which we do factor into every one of our basing decisions, which is how do we get to a point where what we placed there—you know, one plus one equals three because you are actually able to get the synergy of the mission. And so in that regard, I agree.

Senator SULLIVAN. I am summarizing, but these are all characteristics in the law. I just hope you take those very seriously as you committed in your confirmation, General, you would.

Let me ask one final question kind of switching topics here.

In your personal opinion, do the Chinese or Russian cruise missiles that are being developed and they have now present a significant to United States air bases in the European and Indo-Asia-Pacific theater, including installations in Alaska like JBER or Eielson or Fort Greeley?

General GOLDFEIN. I am concerned, Senator, but I am also confident, as others before me have testified, that we have what we need to defend the nation at this time.

Senator SULLIVAN. So you think the Army is capable to provide you the Air Force and the bases that you are in charge of globally with sufficient short-range air defense systems to defend overseas air bases?

General GOLDFEIN. I believe the Army has—and I cannot speak for my fellow joint chief, General Milley, in terms of what is in his budget submission, but I will tell you that I know the Army is invested and committed to their responsibility for base defense.

Senator SULLIVAN. But not just ballistic missile. I am talking cruise missile.

General GOLDFEIN. Right.

Senator SULLIVAN. Madam Secretary, do you have a view on that?

Dr. WILSON. Senator, I do think that when it comes to air base defense, that is an area where we probably need to look really carefully. It is one that long term I think all of us as airmen have concerns about. Are we going to be able to defend the bases from which we fight?

Senator SULLIVAN. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Sullivan.

Senator Gillibrand?

Senator GILLIBRAND. Hi, General Goldfein. Hi, Madam Secretary. Thank you so much for being here.

General Goldfein, in the last 2 weeks, General Milley, General Neller, and Admiral Richardson have told me that they have seen zero reports of issues of cohesion, discipline, and morale, as a result of open transgender service in their respective service branches. Are you aware of any specific issues of unit cohesion, disciplinary

problems, or issues of morale resulting from open transgender servicemembers in the Air Force?

General GOLDFEIN. Not the way you have presented the question, ma'am, I am not. I will tell you that I have talked commanders in the field, first sergeants, senior NCOs, and I am committed to ensure that they have the right levels of guidance to understand these very personal issues that they are dealing with. And so we continue to move forward to ensure that we understand the issues.

Senator GILLIBRAND. Have you personally met with transgender servicemembers?

General GOLDFEIN. Yes, ma'am, I have.

Senator GILLIBRAND. What did you learn from those meetings?

General GOLDFEIN. A combination of, one, commitment to serve by each of them, and then number two, how individual each particular case is. It is not a one-size-fits-all approach. It is very personal to each individual. That is why I go back to we have an obligation to ensure that we understand this medically and that we can provide our commanders and supervisors the guidance they need to be able to deal with this so we do not have issues.

Senator GILLIBRAND. Thank you.

Secretary Wilson, on April 3rd, 2018, the American Medical Association wrote a letter to Secretary decrying the recent policy released by the White House. Echoing concerns raised by the American Psychological Association and two former Surgeon Generals, the American Medical Association said, quote, we believe there is no medically valid reason, including a diagnosis of gender dysphoria, to exclude transgender individuals from military service. The memo mischaracterized and rejected the wide body of peer-reviewed research on the effectiveness of transgender medical care. Yet, this DOD panel of experts came to a drastically different conclusion from the preeminent medical organizations in America about gender dysphoria, the effectiveness and impact of gender transition on medical and psychological health, and the ability of transgender servicemembers to meet standards of accession and retention.

Do you know who represented the Air Force on this panel?

Dr. WILSON. On the advisory panel to the Secretary of Defense?

Senator GILLIBRAND. Yes.

Dr. WILSON. Yes, ma'am, I do.

Senator GILLIBRAND. Who?

Dr. WILSON. Ma'am, it as our Under Secretary of the Air Force.

Senator GILLIBRAND. What Air Force health professionals were on the panel?

Dr. WILSON. Ma'am, I do not know.

Senator GILLIBRAND. Do you know whether there were any health professionals from within the government and outside of it to testify before or consult with the panel?

Dr. WILSON. Ma'am, I do not know who testified or was involved in those discussions.

Senator GILLIBRAND. Can you provide that to the committee, please?

Dr. WILSON. I would be happy to provide that.

[The information follows:]

- Under Secretary of the Air Force, the Honorable Matthew Donovan

- Vice Chief of Staff of the Air Force, General Stephen Wilson
- Chief Master Sergeant of the Air Force, CMSAF Kaleth O. Wright

Senator GILLIBRAND. Thank you.

Are you aware of any organizations or people outside of the government who contributed to the work of the panel?

Dr. WILSON. Ma'am, I was not involved in the panel.

Senator GILLIBRAND. At any point since your confirmation, have you recommended to the Department of Defense leadership or to the panel of experts on transgender service any change in policy from the guidelines established by Secretary Carter?

Dr. WILSON. Ma'am, this is a matter that is in the courts, and I think it is probably best, when things are under litigation, that that process play out. The guidance that the Chief and I have given in the service is that all airmen are to be treated with dignity and respect, and we comply with the court order on accessions, as well as retaining airmen who have disclosed that they are transgender.

Senator GILLIBRAND. Well, the White House has not taken your advice about leaving it to the courts. They have issued policy and they have a panel of experts that have listed a recommendation that is contrary to what the Service Chiefs have said in terms of good order and discipline and unit cohesion and morale.

Dr. WILSON. Ma'am, that is now in the courts, the new recommended policy change. While that is being considered by the courts, the court order that we are under continues, and we continue to assess transgender members in accordance with court order.

Senator GILLIBRAND. Ms. Wilson, recently the Air Force Academy's handling of sexual assault cases made national news. Several current and former cadets recounted their experiences of being assaulted and how they were disbelieved, retaliated against, and denied justice.

Since your confirmation as Secretary of the Air Force, what specific actions have you taken to protect survivors at the academy and hold its leadership accountable?

Dr. WILSON. Senator, the Sexual Assault and Prevention Office at the academy when through a command-directed investigation shortly before I was confirmed. The Chief and I have made sure that those positions were filled as a matter of priority and worked with the current superintendent of the academy to make sure that other resources were available for sexual assault prevention and response at the academy while they were hiring to fill those positions.

Senator GILLIBRAND. Have you personally spoke to the Air Force Academy cadets about the academy's current climate surrounding sexual harassment and assault?

Dr. WILSON. Senator, I have talked to cadets at the academy. I do not think I have talked to them particularly about that issue, but I had a number of meetings with cadets with no one else there other than the cadets and me for them to talk about whatever they wanted to talk to me about.

Senator GILLIBRAND. I would recommend you make the effort to do that.

Dr. WILSON. Thank you.

Senator GILLIBRAND. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Gillibrand.

Senator Scott?

Senator SCOTT. Thank you, Mr. Chairman.

Good morning to the panel. Thank you both for being here, and thank you for your service to our country.

I was happy to read about the Air Force's efforts to advance its hypersonic weapons program. It is no secret that our nation and our military are facing competition from both Russia and China. It was during a recent HASC hearing when Under Secretary Griffin stated concerns about our country's slow pace of advancement in hypersonic technology. He said we will, with today's defensive systems, not see these things coming. That is a little disconcerting.

My question, Secretary Wilson, what is the Air Force doing in the field of hypersonic weapons to ensure the U.S. does not lose its technological advantage?

Dr. WILSON. Senator, we had a summit on hypersonics in the Air Force last summer in July and made the decision to pursue two different prototypes as part of that work. One of those prototypes we are doing in partnership with DARPA. The other one was the one that you saw announced in the paper last week.

I think the other piece of good news is that the services are working very closely together on these technologies, and the guidance is to go fast and to leverage the best technology available.

Senator SCOTT. Thank you.

If funded to the level requested in the President's Budget, when do you expect we will be able to deploy a hypersonic weapon on Air Force aircraft? Either. General?

General GOLDFEIN. Sir, there are actually two programs that we are working on right now. One is a hypersonic conventional strike weapon, and the other one is an air-launched rapid response weapon. Both of those are what you see in our budget in terms of our investment in hypersonic technology. I do not have right now a prediction of when we can actually field those. I can just tell you that we are committed to them and we are moving out.

Senator SCOTT. Thank you.

I was very pleased to hear earlier this year that South Carolina's Shaw Air Force Base was chosen to be the home for a new remotely piloted aircraft group flying the MQ–9 Reaper. Shaw Air Force Base is already home to the 20th Fighter Wing, the largest F–16 wing in the Air Force. So I certainly welcome the new and different mission. I understand the Air Force has already started moving personnel to Shaw in support of this new group.

To either you, Secretary, or General, would you give me an update on where we are in that move and how close we are to seeing things happen?

General GOLDFEIN. So the wing at Shaw is going to be a mission wing. We chose Shaw Air Force Base because of the mission synergy associated with the command and control headquarters there, the 9th Air Force, 3rd Army, all those. So right now we are in the process of moving the personnel and equipment there. Right now my look of our timeline for the full beddown of being able to bring us to initial operating capability is we are on track. So I do not see any show stoppers right now with what we are going at Shaw.

Senator SCOTT. Can you talk about the MQ–9 Reaper program and the importance it plays in our future Air Force?

General GOLDFEIN. I can, and I can talk to you about this as an MQ–9 pilot. I had a chance to check out and fly that aircraft as a general officer. I will tell you, sir, that I believe that we have only scratched the surface on the true capability of what happens when you separate the aircraft and the cockpit. And it is our young RPA drivers— we call them our A teen Xers—who are going straight into that program, the oldest of which right now are reaching major to lieutenant colonel. They are going in and coming up with absolutely new ways of being able to employ this weapon system in areas that we had not anticipated before.

There is one thing about these remotely piloted aircraft. They are absolutely fearless. You send them anywhere. I think not only in the fight against violent extremism, but if you look at the National Defense Strategy and where we look at China, Russia, Iran, North Korea, all those areas, I think the MQ–9 but more broadly unmanned aviation is going to bring some significant dilemmas to future adversaries.

Senator SCOTT. Thank you very much. That is exciting news, frankly.

The Air Force has been emphasizing the importance of distributed, adaptive, and resilient basing to address the challenges posed by both Russia and China's advanced area denial capabilities. However, in this year's budget, Air Force investments in prepositioned equipment and improved infrastructure in Europe are at least 10 times the investment in the Pacific.

What explains this enormous disparity?

Dr. WILSON. Senator, I think as I mentioned before, I think the European Defense Initiative was out ahead of what we were starting in the Pacific, and I think it got a higher priority and perhaps better refinement earlier. And it may be something that we need to look at rebalancing.

Senator SCOTT. Thank you.

General GOLDFEIN. Sir, I will just offer that if you take a look at the air component in the Pacific, in the Indo-Pacific, the story there is as we got smaller as an Air Force, significantly smaller over the last several years, we reduced our footprint in Europe primarily and in the CONUS, in the continental United States. But our footprint in the Pacific has been fairly stable over time. And so to take this smaller Air Force that needs to go forward very quickly in support of operational planning by virtue of the fact that we can get there very quickly to blunt and stop adversary activity, you saw us investing in the European Defense Initiative on basing and access so that that smaller force can be more agile as the chairman, as the global force integrator determines where he wants to move forces. That is one of the reasons why you saw so much investment in infrastructure in Europe. To our Secretary's point, it is time for us that we are looking at what does that commensurate investment need to look like for agile basing in the Pacific.

Senator SCOTT. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Scott.

Senator Warren?

Senator WARREN. Thank you, Mr. Chairman.

Thank you to our witnesses for being here today.

Secretary Wilson and General Goldfein, you may know that I have been asking questions about the future of the F–15C and D variants, which the Massachusetts National Guard flies to keep 24/7 watch over our country. Frankly, it seems like I am getting a different answer every time I ask the question.

I think part of the challenge here is that the Air Force does not seem to have a strategic road map for its fighter force. We know that the Navy wants 355 ships because the CNO put out a strategy that said so. We know the Air Force wants to buy fifth generation fighters because you have told us that, but you have not explained your budget plans or how you will prioritize tradeoffs between capability and capacity and how that will translate into the aircraft that we keep and the new aircraft that we will buy.

So let me ask. Secretary Wilson and General Goldfein, is the Air Force working on that kind of a road map? When can we expect this committee to get a look at it?

Dr. WILSON. Senator, just to clarify a couple of things.

Senator WARREN. Sure.

Dr. WILSON. With respect to the F–15 and F–16, the budget puts $1.7 billion into those aircraft for radar and electronic service life extension programs.

The Chief directed and we took a look at how do we think about the Air Force, what is our current structure. We did a deep dive on readiness as well. We have about 300 operational squadrons, bombers, fighters, attack, intelligence, surveillance, reconnaissance. Then the question becomes with the new National Defense Strategy released in January, what do we really need given the threats that we face. The Chief has directed a review, and we expect in August to have a review of what are the squadrons we need, not just where are we now and how can we keep things in pretty good shape. So August is when we——

Senator WARREN. So August we expect to see a road map. Thank you. I think this is really important because we are having to make decisions now about upgrading and retiring platforms, and it is hard for this committee to know what to do until we get a look at the full strategy.

The Air Force says that it is a total force, including the Guard and Reserve, and we have moved a lot of capacity into the Guard, so much so that today the Air Force could not complete its mission without the Guard.

So with that in mind, can you give me your commitment that our Guard flying wings will be made whole on the planes that they will have available as part of whatever the final strategy calls for?

Dr. WILSON. Senator, I think the review that we are doing is probably going to show that we need more force structure than we currently have. As General Goldfein mentioned, at the beginning of the Gulf War, we had 134 fighter squadrons. Today we have 56, Active, Guard, and Reserve. The operations tempo for the last 27 years for the Air Force has been very, very high and has stressed our airmen across Active, Guard, and Reserve. You are absolutely right. We cannot do the missions that we do without the Guard.

Senator WARREN. Well, I appreciate that. I hope that is a commitment to make our Guard whole. But I appreciate that you fully understand how important our Guard is in protecting us.

Dr. WILSON. Yes, ma'am.

Senator WARREN. I want to ask about one other area, if I can. I know you mentioned this to Senator Heinrich, but I want to follow up, Secretary Wilson. Last September, you announced that the Air Force research lab would lead a yearlong review of the Air Force's science and technology portfolio to update research priorities and strategy. I was very glad to be able to host you earlier this month at MIT [Michigan Institute of Technology] Lincoln Lab where there is so much incredible cutting-edge research going on.

I understand that your review is also focused on how the Air Force can more productively engage with places like Lincoln Lab and with States, universities and the commercial sector to be able advance your priorities.

Can you just say a word about how you plan to build on these partnerships and what role they will play in the future of the Air Force's efforts to modernize its capabilities?

Dr. WILSON. Senator, it is my perception that when the Air Force went through sequester, we reduced research and development, particularly basic and applied, which is kind of the seed corn of the Air Force long term, and we kept it largely internal. I think we are better and stronger when we partner particularly with universities, research universities, on basic and early stage applied research for a variety of reasons, which you and I probably understand. I am looking forward to the science and technology review which had helped to highlight the areas in which we need to do research and will also tee up ways in which we can partner with others to do research better.

Senator WARREN. I very much appreciate that. You know, I understand that the AFRL [Air Force Research Laboratory] is doing a number of research center site visits. I hope they come to the commonwealth. But I was very pleased to see the increased emphasis on basic and applied research in the Air Force's fiscal year 2019 request.

But as you know, I think we can still do better in this area. Our technological superiority is not guaranteed in the future. We have to fund these programs today because they are the seed corn for our technological advances in the future. Thank you.

Senator INHOFE. Thank you, Senator Warren.

Senator Tillis?

Senator TILLIS. Thank you, Mr. Chairman.

Thank you both for your service and for being here today.

I probably will not use my 5 minutes. I got a couple of business questions to ask you. I think you all know I do not focus much on the job that I think you all do well, which is how to position us best against our adversaries.

But, General Goldfein, when you were doing your opening comments or it may have been an answer to the chair's question, you were talking about—first off, I think both of you talked about your 5-year plan. I think that is great, but you have got 2 years of certainty to execute that plan.

Let us take a look at China's modernization program. Do they historically fund those programs in 1-year or 2-year cliff intervals?

General GOLDFEIN. No, sir, they do not.

Senator TILLIS. So when is the last time that we would ever have intelligence that China was about to dramatically cut their out-year spending in connection with their strategic plans to grow their air force?

General GOLDFEIN. Sir, we have not seen that——

Senator TILLIS. Like never in modern history?

General GOLDFEIN. Not that I know of.

Senator TILLIS. So when you look at your 5-year plan and you know you only have 2 years of certainty, another Congress to deal with, then how do you handicap the likelihood that you are really going to reach that 5-year objective? I mean, you got to look at it the way I would in business. I have gotten my investors to give me 2 years. I go back and convince them to give me 2 to 4 more years. So when you look at the probability of succeeding on your 5-year objective with the uncertainty of spending in the out-years, how do you handicap your probability of being successful? I know everybody in uniform says we are going to make it work no matter what, but there has got to be something behind the scenes that says there is a major risk here because Congress has not done its job and given us any long-term spending trail. And, Secretary, you can start with that and, General, follow up.

Dr. WILSON. Senator, to us, having a 2-year certainty is so much better than we have been in the last 10 years. In 9 out of the last 10 years, the military has started out the year with a continuing resolution. Budget certainty matters a lot to us. But we also accept that this is a constitutional republic and that we propose a budget and that the Congress appropriates and authorizes that budget. I would much prefer this system than many of the others, including honestly what China deals with.

Senator TILLIS. I agree, Madam Secretary, but we also have created a construct that was one of the worst ideas out of Congress, and that is called the Budget Control Act. So on the one hand, we have exactly what you say is a need to come back and appropriate every couple of years. But now we have got this construct that is punitive to the Department of Defense when we do not do our job. That is where some of the weight of your argument, which was very well put, loses its steam because we have created this condition that if we fail to do our job, then you all suffer.

I think when we look at these modernization plans, we take a look at these weapon systems acquisitions, we ask ourselves why it is costing so much more money. Every once in a while, Congress ought to look in the mirror because it is because we are not providing any level of consistent certainty for you all to do your jobs.

You have got your own work to do, and that is the next thing I want to talk about. How well are you doing on getting to the business of the Air Force, improving procurement, acquisition, sourcing, and all the things that you all—to me I have got a third, third, third view of the world. A third of the problems here are constructs like the Budget Control Act that Congress has imposed on the process. A third of them are events out of our control. You just got to deal with it. And a third of them are your own self-imposed regu-

latory burdens and things that you do to yourself that you have not gone back and looked at modernizing. And I view acquisitions, procurement, sourcing as being one of the big ones. So what progress have you made since you were before us last?

Dr. WILSON. Senator, with respect to procurement, we put out and I think delivered to all of you a report on how did we do on acquisition last year for all of our programs. And where we had problems, there was a common theme and that was software. We are looking actually at standing up a particular program office specific to software and digital systems because we do not do that well. But we are also implementing a lot of the authorities that you have given us in prototyping and experimentation to be able to go faster.

Senator TILLIS. Shorter cycles?

Dr. WILSON. Exactly. Shorter cycles, learn what we can, and then come back with a program of record. The adaptive engine is a great example of that, $1.8 billion over the fiscal year defense plan, prototyped engines intended to get 10 percent increase in thrust, 25 percent increase in fuel efficiency.

We just let a contract using your other transactional authorities, which you gave to us, for $100 million put towards space systems. The first two contracts were let for micro-satellites to go direct to geosynchronous orbit using these very rapid other transaction authorities.

So we are trying to move forward at speed to get great capability, to learn and fail fast, and use everything you have given us to defeat and dissuade the adversaries.

Senator TILLIS. Good. Thank you both.

Thank you, Mr. Chair.

Senator INHOFE. Thank you, Senator Tillis.

Senator Nelson?

Senator NELSON. Thank you, Mr. Chairman.

Just a quick couple of points. General, we have been in touch over and over about things trying to keep your Gulf testing and training range without incursion and development. I see that we are going ahead with your investment down there on additional telemetry and so forth.

I was just down there flying with some of your folks and, again, looking at it from a different perspective, up in the air, about how necessary it is to protect your training range.

Likewise, you know, we had a little dust-up down there because fortunately when you stepped in as the top general, the Chief, and said you do not want your undeveloped barrier island messed with because it is going to mess up your training mission, and then I stepped in pursuant to that and stopped the cutting of a pass through there that would increase all of that boat traffic and start to mess up your situation.

So I just want to thank you for standing on that. It is one thing for a colonel down there at Eglin to say it, it is another thing for the Chief of Staff of the Air Force to say it. And so, I think we have all of that under control.

But do you want to just—maybe a sentence or two to say how important your Gulf training and testing range mission is?

General GOLDFEIN. Yes, sir. And what I will emphasize for the committee is the test part of it because the training piece is clearly

important, but having a pristine range that we are able to test, whether it is low observable capability and all the things that we do with weapons procurement and testing it at Eglin there, is absolutely critical that we protect that.

Senator NELSON. Without going into all the background, are you all aware of the single-point failure of the bridge going across the Indian River to get to not only the Kennedy Space Center but also the Cape Canaveral Air Force Station?

Dr. WILSON. Senator, yes, I am.

Senator NELSON. Well, as you know, it is actually owned by NASA [National Aeronauticcs and Space Administration], but obviously the Air Force uses it and it is critical to the Air Force getting your various missions across there and then to their facilities to prepare. Do you want to say anything about that?

Dr. WILSON. Senator, it is an important way for us to operate there at Cape Canaveral. With respect to that bridge, of course, the property is not owned by the Department of Defense. So with respect to military construction, we cannot fix the bridge, but it is owned by NASA.

Senator NELSON. But it is my understanding that you can participate with NASA in some way to—basically the bridge is going to have to be rebuilt.

Dr. WILSON. Senator, I understand that the bridge does not meet the structural requirements. It is a piece of property that we do not own. So it is not something that we have assessed from an engineering point of view.

Senator NELSON. Do you think that that bridge is important to you? If it is not repaired, are any of your launch missions going to be impacted on the eastern test range?

Dr. WILSON. Yes, sir.

Senator NELSON. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Nelson.

Senator Perdue?

Senator PERDUE. Well, I thank both of you for being here again. It seems like you spend more time on the Hill talking to us than you do with your command. But thank you for being here.

General Goldfein, as you and the Secretary have been more than patient with us in both open and in classified briefings about the advanced battle management system, ABMS, that you are envisioning—and I fully support that. As we have also talked about, there is this gap somewhere in the 2020s on ISR [Intelligence, Surveillance, and Reconnaissance] capabilities.

For today, though, I want to talk about how that decision to move to space capabilities and protecting assets in space, given what is going on in particularly the China development in space—you know, in our past in the United States, we have always looked at space as sort of the scientific endeavor. China looks at it totally differently. It is a military endeavor. They just recently launched this supposedly debris clearer and other snuggler satellites behind our GPS [Global Positioning System] capability.

So help me understand how moving capability from air domain to the space domain actually increases survivability? In this open environment, help us understand what your long-term plan is, including the gap that we have sometime in the 2020s.

General GOLDFEIN. Yes. Thanks, Senator.

I would offer to you that the gap that we are required to fill is that gap between both a contested environment and an uncontested environment. As we have discussed, the challenge we face today with the current Joint STARS is that the threats can actually keep them far enough away not to be able to do its job. So this is about supporting soldiers, sailors——

Senator PERDUE. I am sorry to interrupt, General. I apologize. I hate to do that with somebody with four stars on their shoulder.

But with regard to the Navy, the Navy is going in a little bit different direction. Can you tell us the difference in their demand structure versus what our demands on ISR in that regard?

General GOLDFEIN. It is based on mission. But actually the Navy long term is going in the same direction. I can tell you that the CNO [Chief of Naval Operations], Admiral Richardson, and I have—we have had warfighter talks. We are talking about going to a network disaggregated architecture. But the gap that we are filling now is that we have got to make sure that soldiers, sailors, airmen, and marines on the ground in a contested environment, being Kaliningrad, understand enemy ground movement on day one of that campaign at the same time, that I have got it in an uncontested environment, Yemen.

The fact that we can fly Joint STARS [Surveillance Target Attack Radar] longer through 2028 and possibly longer allows us to take a look at moving now to a disaggregated architecture. It is more than just space. It is actually how you connect space and air and sea and land together to produce a common air picture, a common ground picture that equally serves someone in Kaliningrad inside a contested domain where Joint STARS cannot help today and in Yemen where Joint STARS can.

So this has got to be transparent to those on the ground, and as the service that organizes, trains, and equips and presents forces, we got to fill that gap. That gap exists between contested and uncontested.

Senator PERDUE. In the recent action that the United States took in Syria, those weapons were GPS-benefited weapons. Because of that, as we know today, I think it is still true that no collateral damage was incurred because of the pinpoint action. We also know that Russia and China can jam and can affect GPS.

I know this is an open environment, but again, are we moving in a direction where those capabilities are hardened and can be protected in the new battlespace? Secretary?

Dr. WILSON. Senator, the current plan for the Air Force is to move to jam-resistant GPS, and that is in the budget proposal. Of our 77 satellites that the Air Force operates, 31 of them are GPS. We not only provide position navigation, we also provide timing to the New York Stock Exchange and to the ATM machine that you get your cash from. So it enables a huge industry. It also enables a lot for the warfighter.

Senator PERDUE. I have one last question. On a recent trip to China, we were so privileged to stop in Alaska and met the F–22 squadron there. I have to tell you it is a lot of money, but boy, is that impressive, the people, the equipment, the mission, the capability. I slept better for the next week or two.

The commanding officer, though—I asked a question. I said, you know, the primary mission up here—and we had pictures and we saw this information about how the F–22 is tailing a TU–95. So you have a pre-gen one aircraft being tailed by a fifth gen aircraft. My question, obviously not being an expert—I said why do we have a gen five chasing a gen one, and he said, sir, because we are here.

Can you speak to that? I mean, this is a very sophisticated, very expensive piece of equipment. It is now aging, even though it is in the first few years. What are the replacements for that? What is the future of that? We got to fly the wings off it to train people. I get that, but help me understand. This, again, is a limitation of money and funding, but help me understand the mission and strategy of that fifth gen capability.

General GOLDFEIN. Thank you, sir.

It is true that we use those assets and we place those air superiority assets, be that F–15, F–22, F–35, F–16, and we place those where we need to be able to intercept, whether it is Chinese or Russian long-range aviation. So no surprise that we would be using the F–22 to intercept Chinese long-range aviation.

Very important, though, that I think we acknowledge because the previous question talked about sustainment costs of the F–35. I will tell you from the Secretary of Defense on down with Secretary Shanahan, we are all involved in wire brushing down sustainment costs of new aircraft.

But what has not been talked enough about is the operational successes that we have enjoyed. Just to share with you a couple. We took the F–35 to Red Flag last year. 86 percent mission-capable rate of our newer F–35's, a 20 to 1 kill ratio against the most advance adversaries we could put up, more advanced than anything we might face because we were up against ourselves. 26 of 27 direct hits on air-to-ground targets in the most difficult threat environment that we could put them in from both an air and a ground perspective.

We went to Combat Hammer and Archer, which is where we test capabilities, and they were a 100 percent hit rate on air-to-ground munitions and 11 for 11 on shooting AMRAAMs. So the newer F–35's, which is a fusion machine that allows it to actually take information from space and cyber, fuse it together with onboard and off sources, is allowing this weapon system to become the quarterback for the team.

I will just finish by saying I had a great conversation with the Israeli Air Chief, who are now flying the F–35, and he said it is an absolute game-changer for them. They are able to see and sense and fuse information that they have never seen before across the region. So this F–35 and fifth gen is a game-changer for us.

Senator PERDUE. Thank you.

Mr. Chairman, I am so gratified that the rebuilding and the future of our Air Force is in the hands of these two former U.S. Air Force Academy classmates. Thank you both.

Senator INHOFE. Thank you, Senator Perdue.

I might add that was quite a discussion when they cut that back to—I think we currently have 177 of the F–22's. It was considerably more than that I believe. Do you remember the figure?

General GOLDFEIN. Yes, sir. We were on track for upwards of plus 300 to 500, and it was cut to 187.

Senator INHOFE. Yes, it was about half.

Senator Donnelly?

Senator DONNELLY. Thank you, Mr. Chairman.

I want to thank you both for testifying here.

Secretary Wilson and General Goldfein, I do not want to talk too much of our time on the subject today, but I do want to quickly touch on the manned fighter mission in Fort Wayne. I know you are aware of all the great work that the men and women do there every day. General Goldfein, I am sure you will recall our conversation prior to your nomination, in which you told me that you would honor General Welch's commitment that he made to me personally as Air Force Chief of Staff that the Air Force would be maintaining a manned air combat mission in Fort Wayne that would continue to identify opportunities for mission conversion going forward.

Secretary Wilson, you likewise said that you would stand by the commitment.

It is my understanding that the platform transition that we are looking for requires a strategic basing action. That action is still awaiting a final formal decision. Those decisions are made at the Secretary level.

Madam Secretary, what is the status of the strategic basing action?

Dr. WILSON. Senator, we have the A–10's there. 173 of the A–10's have had rewings. The fiscal year 2018 budget restarts the line for rewinging the A–10 and buys four more wing sets. The fiscal year 2019 budget, which is in front of you, will buy somewhere between 8 and 12 additional wing sets, and we have asked the acquisition folks to see, once they get the contract in place, whether we can continue to accelerate the rewinging of the A–10.

Senator DONNELLY. But the platform transition. Is there anything regarding the status of the strategic basing action regarding that?

Dr. WILSON. Senator, we expect to fly the A–10 through the 2030s. So there is no strategic basing action with respect to that.

Senator DONNELLY. As you know, this is an issue of great concern to me. They were talking about the F–16's, and what we want more than anything is a combat mission, as you talked about. So I would appreciate it, in regards to the discussion today, if you will come back and meet with me again for that purpose in my office. We have talked before. This is very, very critical to Fort Wayne, to the promises that have been made to us, the word of the Air Force Chief of Staff, and I would appreciate it if you would commit that you—I can come over to the Pentagon or have you come by my office, either way. But I would appreciate it if we can get together again soon.

Dr. WILSON. Yes, sir. Happy to.

Senator DONNELLY. Thank you very much.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Donnelly.

Any further—Senator King?

Senator KING. Secretary Wilson, a couple of weeks ago, the Defense Department stopped taking deliveries on the F–35's because

of a disagreement about the priming of some fastener holes. I guess two questions. I think we have had 200 of these that have been delivered. Was this a defect that should have been picked up sooner, and is this a change in the Air Force's quality requirement, or is this a problem in terms of the contractor?

Dr. WILSON. Senator, as I understand it, in this case, it was identified—I do not know whether it was the Navy, Marine Corps, or Air Force aircraft that identified corrosion around those rivet holes. The root cause was a failure to prime the rivet holes. Lockheed was apprised of that.

The reason that the joint program office, because this is not an Air Force-run program, but the joint program office stopped deliveries because there is a disagreement with Lockheed about who bears the cost of going back to fix that. It was a requirement of the contract, and they, in my view, need to fix the problem over time so that we do not have corrosion around those rivets.

Senator KING. That is your position that it is the contractor's responsibility to take care of this problem.

Dr. WILSON. Yes, sir.

Senator KING. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator King.

Thank both of you, the witnesses, for your patience and your great knowledge and sharing that with us.

We are adjourned.

[Whereupon, at 11:38 a.m., the committee adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR JONI ERNST

PILOT SHORTAGE

1. Senator ERNST. General Goldfein, how does the Air Force plan to address its critical pilot shortage, given the lack of needed aircraft and the Physiological Episodes its current trainer fleet are experiencing?

General GOLDFEIN. The Air Force is focusing on three main lines of effort: increased retention of current pilots, increased production of new pilots, and optimizing pilot requirements. The Air Force has an Aircrew Task Force that is implementing a plan with major efforts in each of these areas. The unexplained physiological episodes in a small number of aircraft will directly affect production, but does not alter the Air Force plan.

TRAINING AIRCRAFT

2. Senator ERNST. Secretary Wilson, does the Air Force see a need for the procurement of a low-cost primary and evaluation aircraft to extend its capacity for candidate evaluation in the early stages of training?

Secretary WILSON. Not at this time. Currently, we have the efficiency and training capacity with our initial flying training program located in Pueblo, Colorado.

LOW-COST AIRFRAME REQUIREMENTS

3. Senator ERNST. Secretary Wilson, outside of the Light Attack Aircraft program currently being demonstrated, does the Air Force have a need for additional low-cost airframes to free up more complex and expensive aircraft?

Secretary WILSON. Not at this time. With the acquisition of the T–X advanced pilot trainer, the Air Force will be able to perform mission tasks of the high-end fighters on a trainer aircraft, at a reduced cost. If the light attack platform is acquired and once it is proven in combat, it will free up 4th and 5th generation fighters executing missions against violent extremist organizations resulting in the same capability being executed at a lower cost per flying hour.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

READINESS FOR LARGE-SCALE AIR-LAND BATTLE

4. Senator SULLIVAN. Secretary Wilson and General Goldfein, the National Defense Strategy emphasizes the threat of near-peer competition with China and Russia where the United States military could face large scale, air-land conflict. In your personal opinion, is the Air Force fully prepared for a potential great power, joint, Air-Land conflict?

Secretary WILSON and General GOLDFEIN. The Air Force still enjoys a relative advantage over Russia and China, however without continued investment in new platforms and realistic training our advantage can erode. Readiness for near-peer large scale conflict requires integration of joint capabilities across all domains. Over the past two decades the Air Force supported the land component in counter-insurgency operations and perfected air support tactics, techniques, and procedures in an uncontested environment. To prevail in a large scale air-land conflict and reduce risk to mission accomplishment, the Air Force continues to integrate the newest survivable and lethal weapon systems, such as the F–35, to support joint operations with the land component. At the same time the Air Force is divesting itself of the least survivable systems such as JSTARs, which are not suited for a contested Russia or China environment. Planned increases in manpower, flying hours, munitions production, and new systems purchases are all geared at restoring full capability to USAF units.

5. Senator SULLIVAN. Secretary Wilson and General Goldfein,this committee has discussed the need for high-end readiness for both the Air Force and Army. In order to properly prepare for near-peer conflict, would you agree that we need large-scale Joint Air and Ground combat exercises that improve our Air Land Battle joint readiness?

Secretary WILSON and General GOLDFEIN. Yes. The Air Force is committed to preparing for near-pear conflict and works closely with the Army to improve joint readiness. The bilateral agreements between the Air Force and the Army exist to improve and facilitate joint interoperability in the air and land domain. In addition to supporting Army large scale exercises at the National Training Center, the Joint Readiness Training Center, the Joint Multinational Readiness Center, and through the Army's Mission Command Training Program, and the Joint Warfighting Assessment, the Air Force conducts a total of 20 Air Land Battle tactically focused exercises at Green Flag East and Green Flag West. These and other exercises provide the opportunity to practice the critical tactical skills which enable joint operations. The Air Force also provides numerous training opportunities aimed specifically at jointly combating near-peer enemies and integrating joint capabilities in high end exercises such as Red Flag Alaska and Red Flag Nellis, each of which are conducted three times a year.

6. Senator SULLIVAN. Secretary Wilson and General Goldfein,the Joint Pacific Alaska Range Complex (JPARC) in Alaska is the largest joint overland training area in the U.S. with airspace the size of Florida. Would you agree that the JPARC it is an ideal location for the type of advanced integrated training we will need to best counter high-end and near-peer threats?

Secretary WILSON and General GOLDFEIN. The weather and the cost of moving forces to and from Alaska for exercise participation are sometimes challenging. The size of the JPARC combined with the extensive organic training resources located on the range, creates a significant advanced integrated training opportunity. The Air Force routinely takes advantage of this capability during Exercise Red Flag Alaska, which is the Pacific Air Forces' premier tactical joint and coalition air combat employment exercise. Red Flag Alaska has also seen a steady increase in joint participation due largely to the robust capabilities provided by JPARC. Additionally, JPARC supports Exercise Northern Edge hosted by Alaskan Command which trains 6000 joint servicemembers and is Alaska's largest exercise.

7. Senator SULLIVAN.Secretary Wilson, what in the fiscal year 2019 President's Budget will fund training range improvements for the JPARC in Alaska?

Secretary WILSON. Funds for activities like the Alaska JPARC fall within the Range Infrastructure Modernization and Communication (RIMCOMM) program and are programmed in PE 0207429F in the President's Budget. The Air Force Air Combat Command manages the RIMCOMM program and prioritizes the equipment requirements for the ranges and distribute the funds as required by the highest priority mission.

COMMITMENT TO VISIT ALASKA

8. Senator SULLIVAN. Secretary Wilson, I've met with you several times in the last year and repeatedly asked for your commitment to visit Alaska. I recommend that you visit the state during a Red Flag-ALASKA exercise: The perfect opportunity would be the exercise scheduled for August 11–24, 2018, during the Senate recess. When can I expect you to visit Alaska?

Secretary WILSON. Unfortunately, my schedule precludes attendance at Red Flag-Alaska. However, I'll be visiting Alaska from 8–10 August, 2018 to visit our Airmen and partners at Joint Base Elmendorf-Richardson and Eielson AFB. I will ensure my team coordinates with your office on potential opportunities to meet with you or your staff members during my trip. Thank you for your continual support to our Airmen.

QUESTIONS SUBMITTED BY SENATOR DAVID PERDUE

JSTARS—HEDGING FOR RISK AND CAPABILITY GAPS

9. Senator PERDUE. General Goldfein, the Air Force has opted to cancel its JSTARS recapitalization plan, arguing that the proposed replacement is not survivable in the high-end fight. The Navy, on the other hand, is investing heavily in the E–2D Advanced Hawkeye and P–8 Poseidon, which both have similar vulnerability concerns as the proposed JSTARS recap program. Could you explain the Air Force's approach to airborne battle management?

General GOLDFEIN. Currently, the Air Force executes airborne battle management with the E–3 Sentry Airborne Warning and Control System (AWACS) and the E–8C Joint Surveillance Target Attack Radar System (JSTARS) platforms. In highly contested environments the E–3 has a longer range radar to support the Air Force's goal of air supremacy, and the E–8C's radar is optimized for detecting the enemy ground scheme of maneuver. In the future, the Air Force will transform the AWACS into a multi-domain platform by fusing its active and passive sensors with space-to-surface information feeds across multiple classification levels.

10. Senator PERDUE. General Goldfein, can you explain how the Air Force and Navy intend to jointly execute airborne battle management in a high-end fight?

General GOLDFEIN. The Air Force and Navy routinely train and execute battle management across the full spectrum of warfare. The E–3, E–8, P–8 and E–2 platforms are equipped to share air, ground, and surface data across all four platforms via Link-16 and other data links. The crews of all four platforms are trained to communicate and synchronize each platforms' abilities to present a coherent air, ground, and surface picture to combatant commanders. In the high-end fight, the two services are moving forward aggressively to find new ways to share data, produce common operational pictures, and execute multi-domain operations.

11. Senator PERDUE. General Goldfein, the legacy JSTARS aircraft are due to be divested in the early to mid-2020s, starting with 3 aircraft in fiscal year 2019, although you have stated that divestiture may be stretched out to the late 2020s but only as late as 2028. While the Air Force is proposing an incremental approach to fielding ABMS, much of the proposed plan remains aspirational. This committee remains concerned that the Air Force is divesting existing capability before its replacement is mature, let alone fielded. What are the specifics of the plan for the Air Force to manage the risks inherent in fielding the Advanced Battle Management System, particularly in the mid-2020s to early 2030s, when there will no longer be legacy JSTARS to fill in should the Air Force's plan be delayed or deemed unfeasible?

General GOLDFEIN. The Advanced Battle Management System (ABMS) focuses on conducting combat operations in the highly contested environment. The Air Force's proposed incremental approach to replace JSTARS will develop and integrate space, air, and ground based sensors on manned and unmanned platforms to meet combatant commander requirements in both contested and non-contested environments. The Air Force's plan to continue to support the joint force is built into three increments.

The first increment focuses on integrating current technologies into existing platforms and investing in anti-access/area denial capabilities. Increment one includes buying back the seven E–3 AWACS planned to be retired and expanding the entire fleet of 31 E–3's battle management capacity to better support ground operations; maintain the fleet of 11 RQ–4 Global Hawk Block 40 aircraft and further utilize the ground moving target indicator capability of the MQ–9 fleet.

Increment two focuses on work on converting to a multi-domain battle management/command and control (BMC2) model by further enhancing data link capability and capacity amongst fourth-and fifth-generation aircraft, and integrating higher classification level information into the E–3G and Control and Reporting Centers.

Increment three completes the transformation of BMC2 by implementing the results of the ABMS Analysis of Alternatives (AOA) to deliver a multi-domain, multi-sensor, and resilient BMC2 system.

12. Senator PERDUE. General Goldfein, by what criteria will the Air Force evaluate progress towards achieving implementation of advanced battle management system?

General GOLDFEIN. While the Advanced Battle Management System (ABMS) analysis of alternatives (AOA) is ongoing (concludes in the summer of 2020), the Air Force is investing in technology and procuring systems to (1) build an agile, resilient communication architecture that expands data pathways; (2) develop advanced sensors for near-peer competition; and (3) modify battle management software to enable command and control of multi-domain operations. The Air Force will utilize authorities provided by Congress to the fullest extent, e.g. prototyping and experimentation, to allow the fielding of capabilities to the warfighter as soon as possible. Upon completion of the AOA, the Air Force will define the technological end-state for ABMS fielding.

13. Senator PERDUE. General Goldfein, are you planning to take steps to make JSTARS legacy maintenance more cost effective?

General GOLDFEIN. Yes, the Air Force is taking steps to increase the cost effectiveness of JSTARS legacy maintenance. Program Depot Maintenance (PDM) is currently done by Northrup Grumman and we will continue to rely on them for maintenance support. The Air Force plans to bring an E–8C JSTARS into the Warner Robins Air Logistics Complex at Robins Air Force Base, Georgia, for PDM later this summer. This will be a proof of concept initiative intended to supplement the work being done at Lake Charles, Louisiana.

JSTARS SURVIVABILITY AND THREATS TO SPACE

14. Senator PERDUE. Secretary Wilson and General Goldfein, the Air Force has argued that the JSTARS Recap would not be survivable in a highly contested environment. A key component of the Air Force's ABMS alternative is space-based. However, Air Force leadership, including both of you, have repeatedly stated that space is now a contested domain. This committee is concerned that the Air Force is simply moving capability from one contested domain to another. Can you explain how moving capability from the air domain to the space domain increases survivability when concerns remain about the survivability of our space assets?

Secretary WILSON and General GOLDFEIN. While the majority of this conversation is classified, two key characteristics of the Advanced Battle Management System (ABMS) are agility and resiliency. The Air Force is working to spread the capabilities of ABMS across multiple domains: air, space, and surface. Spreading the capabilities and the components of ABMS across multiple domains forces a targeting problem, driving adversarial forces to expand (and dilute) their targeting plans. By taking this approach, we mitigate the risk of losing exquisite capability associated with one complex system by having a variety of smaller scale components should an adversary conduct offensive operations in any domain.

15. Senator PERDUE. Secretary Wilson and General Goldfein, do you plan to invest more in ISR analysis for the ABMS system in the future to make up for the loss of real time analysis that occurs on JSTARS now?

Secretary WILSON and General GOLDFEIN. No, there is no need to invest more in analysis. JSTARS combines a ground sensing radar with on-board battle managers trained to assess movement. The Air Force's plan may disaggregate sensors from the battle management personnel, but it will still be accomplished real-time by Air Force air battle managers.

16. Senator PERDUE. Secretary Wilson and General Goldfein, are you concerned about the loss of real-time ISR for combatant commanders and troops on the ground and the impact on the kill chain? (Clarification from Sen Perdue's office: This is related to the connections between the family of systems and space threats. Sen Perdue is asking about the effect of the loss of a satellite to the proposed ABMS. What would happen to the troops on the ground if a satellite (being used in real

time) was lost during their ground operations? Is there a concern there on par with JSTARS survivability concerns?)

Secretary WILSON and General GOLDFEIN. This is not an ISR issue. The ground moving target indicator capability provided by the RQ–4 Block 40 and MQ–9 fleets can provide the same real-time data to battle managers and ground commanders to inform them of enemy ground scheme of maneuver. With the data that is gathered by other airborne sensors and those that are space-based, there is no impact to the kill chain. The data links and information architecture in-place and under development provide the warfighter real-time and near real-time battle management capability.

JSTARS—LOW COST OPTIONS

17. Senator PERDUE. Secretary Wilson and General Goldfein, could you please explain the impact to the Air Force if Congress directs the Air Force to continue the Recap program as previously envisioned?

Secretary WILSON and General GOLDFEIN. Without an additional topline increase of $7 billion, the Air Force would have to make difficult budgetary choices significantly affecting the readiness and warfighting capability of the force. The Air Force would be forced to spend less money on developing capabilities to accomplish the mission in contested environments.

18. Senator PERDUE. Secretary Wilson and General Goldfein, yes or no, has the Air Force ever considered finding a cheaper, faster way to do recap, for example a used airframe and existing radar technology?

Secretary WILSON and General GOLDFEIN. Yes. The Air Force considered a variety of options as part of the 2011 Analysis of Alternatives. However, recapitalizing the E–8C fleet on a commercial derivative aircraft with an enhanced radar, modern battle management command and control suite, and robust communications was the best option during that timeframe.

19. Senator PERDUE. Secretary Wilson and General Goldfein, if the Air Force has considered a low cost option referenced in Question 10, can you provide all documentation and analysis associated with all recapitalization solutions the Air Force has considered?

Secretary WILSON and General GOLDFEIN. As previously referenced in Question 18, a variety of options were considered in the 2011 Analysis of Alternatives (AOA), and recapitalizing the E–8C was the best option at that time. The 2011 AOA can be provided, upon request.

20. Senator PERDUE. Secretary Wilson and General Goldfein, could a low cost solution be cheaper than extending the service life of the legacy fleet?

Secretary WILSON and General GOLDFEIN. It is possible that a low cost solution would be cheaper than extending the service life of the legacy JSTARS fleet. However, a proper comparative analysis would be contingent upon a low cost solution being identified. The problem remains that, while cost is a factor, the primary issue we are addressing with advanced Battle Management is the expected threat environment.

21. Senator PERDUE. Secretary Wilson and General Goldfein, would getting a new platform online faster mean you would have greater capacity and capability in the near-term, save on maintenance costs to the legacy fleet, and hedge against the risk of a capability gap, should the Air Force's plan for ABMS not come to fruition in time?

Secretary WILSON and General GOLDFEIN. While there would be savings in maintenance costs and an increase in capacity as compared to today's availability rate of the E–8C, there will not be an increase in capability. The current recapitalized program was intentionally established to quickly replace the legacy E–8 fleet with little improvements to the 30 year old requirements. The Capability Decision Document (CDD) and Key Performance Parameters (KPPs) as written for the Recap program to do not address a significant increase in command and control capability needed as compared to the legacy E–8C or the evolving capability of the adversary to render Recap ineffective in a contested environment. Advanced Battle Management System is intended to provide command and control in highly contested environments.

22. Senator PERDUE. Secretary Wilson and General Goldfein, would you agree that a new platform that extended the life of the JSTARS capability into the 2030s, and possibly beyond, still be useful in counter-drug operations, counter-insurgency operations, and wartime operations in battlespaces where ground troops are operating but the U.S. has gained air superiority?

Secretary WILSON and General GOLDFEIN. Yes. However, the 2018 National Defense Strategy directs the Air Force to equip and prepare itself for the high-end fight. We are behind as a nation in our ability to project power in anti-access environments. Engagements and conflicts against near-peer threats must drive capabilities developed today and in the future. Given these facts and with the limited resources available, the Air Force must develop a ground moving target indicator/battle management command and control capability that is survivable in the high-end fight. Anything developed must enhance warfighter capability across the entire range of military operations.

JSTARS—COST OF RECAPITALIZATION PROGRAM

23. Senator PERDUE. Secretary Wilson, in your testimony, you state that the JSTARS recap would cost the Air Force $15 billion in total lifecycle costs. Can you provide the documentation for how this number was determined?

Secretary WILSON. Yes. The JSTARS Recap Milestone A Independent Cost Estimate is attached.

24. Senator PERDUE. Secretary Wilson, can you provide documentation for how much the Air Force plans to spend in life cycle costs and maintenance on the current fleet if its life is extended to 2028 or beyond?

Secretary WILSON. Yes. If the current fleet, of 16 aircraft, is extended until 2028 the total for life cycle costs and maintenance would be $4.180 billion. The breakdown is shown below:

Table 1. Plan Choices for Military Beneficiaries Compared to Federal Civilians

Fiscal Year	Amount per/year ($ millions)	Cumulative
2019	$373.1	$373.1
2020	$382.5	$755.6
2021	$392.0	$1,147.6
2022	$401.8	$1,549.4
2023	$411.9	$1,961.3
2024	$422.2	$2,383.4
2025	$432.7	$2,816.1
2026	$443.5	$3,259.7
2027	$454.6	$3,714.3
2028	$465.9	$4,180.3

AIRBORNE DATA LINK PLAN

25. Senator PERDUE. General Goldfein, Air Force leadership has discussed the importance of networks in their visions of the future Air Force. The committee is concerned the Department of Defense's ideas for airborne data links have lacked vision and been disjointed. Could you explain the Air Force's efforts in this area?

General GOLDFEIN. The Air Force is investing in a diverse and flexible communications architecture that leverages open standards and modular approaches to enable interoperability within the Air Force and across the Services. The Air Force fiscal year 2019 budget invests in the following capabilities to support data link interoperability and an open architecture:

- Battlefield Airborne Communications Node (BACN)—A high-speed, resilient airborne communications network to enhance current command and control capabilities across all domains through tactical data links. In fiscal year 2019, this program transfers from Overseas Contingency Operations funding to the baseline budget.
- Joint Aerial Layer Network (JALN) High Capacity Backbone—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.
- Tactical Data Link Modernization—Air Force is modernizing data links, including Link 16, to extend and improve the capacity and resilience of Joint airborne tactical networks.
- Mobile Unmanned/Manned Distributed Lethality Airborne Network (MUDLAN) Joint Capability Technology Demonstration (JCTD)—Air Force is working with USD(R&E) and the Navy on MUDLAN, which will demonstrate a fused Tactical Data Link/Common Data Link network for easy Joint interoperability at the tactical edge, with a high data capacity to enable new tactical applications.
- AERO Net—Air Force is developing AERO Net, a fully exportable data link to enable secure information sharing with any mission partner, empowering our allies in combating violent extremist organizations worldwide.

More generally, we take your point on cohesion and share your concern. The Air Force is seeking to promulgate and require all programs to use standard interfaces for communications and we are working with the other Services to achieve alignment. This Open Mission System and Universal Command and Control Interface standard will drive interoperability and interconnectivity across services, contractors, and equipment. If everything can connect, and everthing can share, multi-domain operations are enabled.

26. Senator PERDUE. General Goldfein, how are you ensuring Air Force airborne data links are interoperable within your own elements as well as across the joint force?

General GOLDFEIN. Link 16 is the primary data link for the U.S. Air Force, and is the cornerstone for interoperable airborne data communications across the Joint Force today. Link 16 is employed across the DOD, and by 43 of our partner nations. The Air Force is implementing enhanced Link 16 terminals, Multifunctional Infor-

mation Distribution System Joint Tactical Radio System (MIDS JTRS), on most platforms to improve security and better utilize network capacity. In addition to Link 16, the Joint and international F–35 enterprise is interoperable through the Multifunction Advanced Data Link.

To connect Air Force and Joint tactical edge users using disparate or disconnected communications systems, the Air Force uses airborne and ground gateways to translate and relay voice and data. Notably, Air Force investments in the Battlefield Airborne Communications Node (BACN) gateway provides an airborne hub for disparate signals.

Internal to the Air Force, Air Combat Command is the lead organization synchronizing tactical communications and networking requirements. To ensure alignment across the Joint Force, the Air Force participates in a number of joint venues to promote data link interoperability, including the Joint Aerial Layer Network Council, Joint Air Dominance Organization, Joint Datalink Acquisition Working Group, and the Joint Technical Coordinating Meeting.

QUESTIONS SUBMITTED BY SENATOR JACK REED

PROGRAMMING AND BUDGETING FOR CONTRACTED SERVICES

27. Senator REED. Secretary Wilson, the Defense Business Board did a February 2018 study that noted that in fiscal year 2016, DOD spent $141 billion on 777,000 service contractors, double the $71.5 billion it spent on 740,000 civilian employees. The DOD spent roughly as much on contract services as it did on MILPERS ($141 billion compared to $136 billion). When is the Air Force planning to implement the GAO recommendation to more transparently budget for contracted services workforce spending in the same manner as currently exists for weapon systems, military and civilian force structure?

Secretary WILSON. The Air Force is working with the Office of the Secretary of Defense to establish greater transparency in how mission dollars are allocated for services. Services acquisitions are not stand-alone requirements; they are interrelated to the on-going every day missions of the Air Force.

SERVICE REQUIREMENTS REVIEW BOARDS

28. Senator REED. Secretary Wilson, are the Air Force's Service Requirements Review Boards mainly focusing on better buying practices for contracted services or are they also challenging requirements and looking for duplication between other contracts and work done by the military and civilian workforces?

Secretary WILSON Air Force Service Requirements Review Boards vet requirements through a Requirements Approval Document, an early strategy and issue session, and an Acquisition Strategy Panel. Likewise, requirements are assessed against commercial capabilities, existing contracts and contract vehicles and input from Air Force manpower organizations.

29. Senator REED. Secretary Wilson, are the Service Requirements Review Boards being made part of Air Force budget and programming process or are they still focused on near term spending for contract services?

Secretary WILSON Service Requirements Review Boards are not a part of the Air Force budget and programming processes. Mission owners maintain responsibility to budget and plan for their contracted services. The Requirements Approval Document, early strategy and issue sessions, and market research are considered when the mission owners budget and plan for their contracted services.

AIR FORCE CIVILIANS

30. Senator REED. Secretary Wilson, explain the role of the Air Force civilian workforce to achieving your readiness recovery goals.

Secretary WILSON The Air Force civilian workforce plays a critical role in enabling AF readiness recovery. Our civilians work side-by side with our military to support and train the force and ensure readiness of Air Force systems. For the air mission, our civilians boost training pipeline capacity to develop and train the force, expand pilot and maintenance training as instructors, and maintain and repair aircraft. In operational units, they are part of the workforce that generate aircraft sorties to train our pilots. Air Force Civilians play this same role across the range of operations to include Space, Cyber and Intelligence. Our civilian force is also the predominant force supporting our Airmen and families at home and abroad, from child care to lodging and various Morale, Welfare and Recreation (MWR) programs.

31. Senator REED. Secretary Wilson, is there a link between years of directed reductions to the Air Force's civilian workforce and the current state of readiness in the Air Force?

Secretary WILSON Yes. Prior year civilian reductions and sequestration hiring controls created significant shortfalls in critical occupations required to accomplish the Air Force mission (e.g., cyber, depot maintenance, childcare providers). With the dynamic environment and changing requirements at the installation level, technical skills and expertise are in high demand. Direct Hiring Authorities under National Defense Authorization Acts of 2016, 2017 and 2018 have assisted our ability to directly hire qualified candidates to meet mission needs. We are making maximum use of these authorities.

32. Senator REED. Secretary Wilson, what challenges will reductions to its civilian workforce create in efforts to generate readiness for the Air Force?

Secretary WILSON The Air Force civilian workforce is vital to the readiness of the Air Force. When we don't require a military authorization, the civilian force provides a cost effective solution for our work force. As the Air Force seeks to improve and sustain mission readiness, it must have the right mix of military and civilian resources to accomplish the mission. Arbitrary civilian reductions without readiness assessments can result in skills gaps in the force, to include mission critical areas such as maintenance, Cyber, air operations, and support functions, as well as readiness impacts when uniformed Airmen don't have the support they need.

33. Senator REED. Secretary Wilson, would the capability and lethality of the Air Force be improved if you were able to grow your civilian workforce?

Secretary WILSON The Air Force five year plan includes an increase of $1 billion for civilian personnel. While we do not manage end strength for civilians in the same way that we manage the military, this increase will result in approximately 700 additional Air Force civilians.

34. Senator REED. Secretary Wilson, Do you have military members performing jobs that are more appropriately and affordably able to be done by civilians?

Secretary WILSON The sizing of the military presence is determined by wartime and overseas requirements. We are assessing this requirement in light of the new National Defense and Military Strategy. That review will be complete this fall with a full report due to Congress in March 2019.

QUESTIONS SUBMITTED BY SENATOR JEANNE SHAHEEN

SECURITY FORCE HELMETS

35. Senator SHAHEEN. Secretary Wilson, since 2009 the U.S. Air Force Security Forces (SF) has been upgrading their equipment and training to combat adversaries and protect the force. This effort has been done in a piecemeal format and the various equipment items do not integrate well with each other. In the past, we have seen several individual units purchase ballistic plate carriers with no soft armor backers, helmets of various types, helmet suspension systems, Night Vision Goggles front mounts and rails. By using this approach, the SF career field struggles with reliable standardized equipment that could potentially severely hurt or kill an SF member. To date, the Air Force Security Forces Center (AFSFC) has yet to make a decision on a high cut helmet for the SF career field. There has not been a Broad Area Announcement (BAA), Request for Information (RFI), Industry Day or contracting vehicle identified for the procurement of high cut helmets, but the AFSFC is currently in the process of fielding their new communication headsets that are required to be attached to the helmet for use. Additionally, units like the 820th Combat Operations Squadron (COS), AFGSC Tactical Response Forces and Phoenix Raven Teams are forced to procure their own high cut helmets to support their missions and there is no standardization across the career field, thus potentially wasting taxpayer money. Given the confusion among industry on this topic, can you please provide an overview of the SF plan for procurement regarding head protections systems?

Secretary WILSON The Air Force Installation and Mission Support Center (IMSC) established centralized acquisition processes to address the provisioning of the high cut helmet for the SF career field. Subsequent to a complete assessment of all available options, IMSC determined that rapid fielding using the Defense Logistics Agency (DLA) or Government Services Administration (GSA) was the best practice to obtain the required helmets and ensure a systemic solution for integrating vital com-

munication headsets and to provide the optimum protection and operational capability for the warfighter.

Following market research and wear testing, IMSC pursued the high cut helmets through a GSA Blanket Purchase Agreement for Government Off-The Shelf /Commercial Off-The Shelf processes. The outcome of the market research and wear tests resulted in the Item Manager approving the Team Wendy high cut helmet. The Air Force Security Forces Center is developing a prioritized fielding strategy and replacement plan based upon a data call being conducted with Security Forces Squadrons to assess operational needs. The data call will be completed by the end of June 2018 with a follow-on resourcing prioritization strategy.

CLEAN UP EFFORTS AT PEASE AIR NATIONAL GUARD BASE

36. Senator SHAHEEN. Secretary Wilson, I understand that in August 2017 the Air Force agreed to pay the city of Portsmouth (New Hampshire) $1.3 million to continue ongoing clean-up efforts at Pease Air National Guard Base. Would you please provide an update regarding these efforts?

Secretary WILSON The Air Force Base Realignment and Closure program is providing the funding to the City of Portsmouth. The Air Force entered into an Environmental Services Cooperative Agreement (ESCA) for $1.3 million with the City of Portsmouth in 2017 to fund design of an upgraded treatment facility to remove PFOS/PFOA from drinking water to the Pease Tradeport. The design is now 60 percent complete and the City expects to complete the design in the next two months. The Air Force will negotiate a new ESCA with the City before the end of fiscal year 2018 to fund construction of the upgraded drinking water plant.

COMBAT RESCUE HELICOPTER

37. Senator SHAHEEN. Secretary Wilson and General Goldfein, I led a bipartisan letter to both of you in October expressing concern about any change in the current acquisition plan, as had been rumored. Secretary Wilson, you responded in December that the program is on track and confirmed the program of record remains 112 aircraft. Does the Air Force's commitment to the full build plan remain ironclad?

Secretary WILSON and General GOLDFEIN. Yes, the Air Force remains committed to buying the Combat Rescue Helicopter program of record of 112 aircraft.

38. Senator SHAHEEN. Secretary Wilson and General Goldfein, numerous force structure studies have shown the need for between 141 and 171 aircraft to meet rescue requirement demands. Is the Air Force considering the possibility of expanding the number of CRH aircraft?

Secretary WILSON and General GOLDFEIN. Currently the Air Force plan is to procure 112 Combat Rescue Helicopters. The 112 program of record balances risk of world-wide capacity needs from the combatant commanders with full life cycle cost of the Combat Rescue Helicopter Program.

C–130HS

39. Senator SHAHEEN. Secretary Wilson and General Goldfein, according to the Air Force's Budget Request for fiscal year 2019, the Primary Aircraft Authorization (PAA)—the number of aircraft authorized to a unit for its operational mission—across the entire C–130H fleet will be reduced by ten aircraft. There are 13 C–130H units across the Air National Guard, including the 103d Airlift Wing stationed in Connecticut. Since 2001, over 1,700 Connecticut Air National Guard personnel of the 103d Airlift Wing have deployed in support of global operations. Given the continuous high operational tempo of our Air National Guard C–130H units like the 103d, I am concerned that a reduction in Primary Aircraft Authorization (PAA) could impact C–130H squadron readiness to meet both federal and state mission requirements. Can you discuss the Air Force's intention to reduce the PAA of Air National Guard C–130H units? Has the Air Force identified which Air National Guard units will see a reduction of C–130Hs on their flight line?

Secretary WILSON and General GOLDFEIN. The fiscal year 2019 President's Budget (PB) takes a necessary step to better position the Total Force to balance the demands of the steady-state depot maintenance schedule and modernization initiatives that are crucial to long-term fleet viability. Currently, the Air Force has 11 percent of the fleet in Depot with just 4 percent of the inventory in Backup Aircraft Inventory (BAI). Existing programmed modifications to the C–130 fleet are projected to increase depot levels to approximately 18 percent for the next 5 years. The Primary Aircraft Authorization (PAA) to BAI shift the Air Force programmed in the fiscal year 2019 President's Budget establishes the BAI at 11.3 percent to more closely account for the forecasted depot levels. Additionally, the rebalance of PAA to BAI

more accurately reflects the status and availability of the fleet to the warfighter and will not reduce the Air Force C–130 Total Aircraft Inventory (TAI).

Specifically, the PB transitions 16 (3 C–130J and 13 C–130H) ANG combat-delivery C–130 units from 8 PAA to 7 PAA, 6 Active Component units from 14 to 13 PAA and 2 Air Force Reserve units from 8 to 7 PAA, and 1 unit from 10 to 9 PAA.

This programmatic action does not reduce the number of aircraft on any Total Force flight line. If inventories at individual units are adjusted in the future, it would be for reasons other than the PAA to BAI conversion. Additionally, the Air National Guard and Air Force Reserves retained all of their manpower, effectively increasing crew ratios, which should improve their readiness metrics.

NEXT GENERATION EJECTION SEAT

40. Senator SHAHEEN. Secretary Wilson and General Goldfein, the Air Force has established a funded program of record with the Next Generation Ejection Seat (NGES) to improve the level of safety protection for aircrew flying with the remaining Advanced Concept Ejection Seat (ACES) II on legacy aircraft; however, it is rumored that the program's schedule has been pushed to the right and delayed until 2021. Considering the risk to our aircrew, would you agree that it would be prudent for the Air Force to accelerate NGES and prioritize the upgrade to ejection seats to reduce the risk, or prevent fatalities resulting from high-speed ejections with helmet mounted devices?

Secretary WILSON and General GOLDFEIN. The Air Force plans to move forward with the Next Generation Ejection Seat efforts and as such have allocated funding to start the Research, Development, Test and Evaluation activities in fiscal year 2021 as reflected in the Fiscal Year 2019 President's Budget submission. At this time there is no plan to accelerate the program. We continue to balance funding challenges with the acceptable level of risk while minimizing safety concerns for our aircrews.

QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

READINESS: ADVERSARY AIR TRAINING

41. Senator HIRONO. General Goldfein, this March, I visited the Hawaii Air National Guard at Joint Base Pearl Harbor Hickam (JBPHH), where I revisited a readiness challenge that I have been working on with Air Force leadership including General Robinson and General O'Shaughnessy for a few years. The challenge involves adversary air capability. In Hawaii, the Guard unit is forced to go F–22 against F–22 in many cases. Unlike other bases, JBPHH F–22 Raptors do not have a locally based aggressor squadron to carry out this adversary air requirement.

You mentioned during the hearing that this was a home station issue and Hawaii based F–22 crews receive training when they are away from JBPHH and during flight simulator training at their home station. Given that we'd like to also have them trained for readiness with live exercises when they are home, in addition to the commercial solutions you mentioned, can the Air Force consider having additional fighter units either designated aggressor units or regular flying units spend more time at JBPHH to provide training for the home unit as well as units visiting on TDY?

General GOLDFEIN. The Air National Guard (ANG), Pacific Air Forces, and Air Combat Command are pursuing contracted adversary air (ADAIR) to train Hawaii-based F–22 crews. The Environmental Impact Analysis Process (EIAP, 32 CFR 989) has been initiated for JBPHH and is expected to be completed by February 2019. When a favorable EIAP is completed, contracted ADAIR jets and pilots will be permanently stationed in Hawaii to allow more realistic training for F–22 crews and to avoid having to use limited and expensive F–22 flying hours for red air when training Hawaii-based F–22 crews.

Additionally, the ANG sponsors three Sentry Aloha exercises at JBPHH to bring jets and crews from 4th Generation fighters from CONUS-based units to Hawaii to train with Hawaii-based F–22 crews. These exercises provide valuable deployment training to CONUS-based units as well as dissimilar aircraft training to F–22 crews. The ANG has recently reallocated equipment from the closure of the Total Force Training Center at Davis Monthan Air Force Base in Tucson, Arizona to JBPHH to reduce the cost of hosting Sentry Aloha, making it a more cost effective option for exercises and increasing the value of the exercise by including more units and securing airlift for units to travel with less equipment because it is now permanently assigned to the 154th Wing. Sentry Aloha focuses on air-to-air fighter train-

ing and integrates a wide range of military capabilities into the scenarios and realistic training.

42. Senator HIRONO. General Goldfein, will you commit to working with me to ensure that the 199th Fighter Squadron at JBPHH is provided the level of training required to ensure readiness levels are maintained in the unit without sacrificing airframe hours on the F–22's by serving in adversary roles?

General GOLDFEIN. Yes, we will continue to work with you as we explore options for adversary air training at Joint Base Pearl Harbor-Hickam.

SEXUAL HARASSMENT IN THE MILITARY

43. Senator HIRONO. Secretary Wilson and General Goldfein, the Sexual Assault Prevention and Response Office (SAPRO) report released in February covering 2016–2017 determined that the Air Force Academy's Sexual Assault Prevention and Response (SAPR) program mismanagement put it out of compliance with Department and Air Force victim assistance and advocacy policy—putting the Air Force Academy in partial compliance overall. As a member of the Senate Armed Services Committee as well as on the Board of Visitors for the Air Force Academy, I want to continue to work with you as well as the leadership at the Air Force Academy to continue to make progress on this critical issue. Can you update me on how the Air Force is doing on the issue of sexual harassment, assault, and retaliation at the Academy as well as the Air Force as a whole?

Secretary WILSON and General GOLDFEIN.

Sexual Assault Prevention & Response (SAPR):

Since 2015 the Air Force has been implementing a comprehensive sexual assault prevention and response strategy that focuses on developing and implementing effective sexual assault prevention, effectively preventing behaviors that co-occur with sexual assault, and ensuring a robust response system. Ongoing monitoring of the strategy implementation indicates that the Air Force is making strides in creating a climate of dignity and respect and empowering all Airmen to prevent and report assault and harassment.

As a result of the command-directed investigation earlier this year, USAFA leadership restructured and added new positions to the USAFA SAPR program. With support from the Secretary of the Air Force, the Chief of Staff and Air Force Personnel Center (AFPC), USAFA now has a robust SAPR office with a new Program Manager, a USAFA Sexual Assault Response Coordinator (SARC), three Victim Advocates (VAs), a 10th Air Base Wing (ABW) SARC and two Violence Prevention Integrators (VPIs).

In October 2017, the USAFA Superintendent published a policy outlining his views on sexual misconduct and set his expectations of treating everyone with dignity and respect. Additionally, since privacy was a prominent concern before the current office was staffed, the Superintendent wrote and distributed a memo that emphasized all who are involved in the SAPR process have an obligations to protect privacy.

At all times during the investigation, restructuring and hiring process, victim care and prevention was and continues to be priority number one. It is important to note that the USAFA SAPR office is just one part of a multi-pronged approach to prevention and response effort—taking care of victims and combating sexual assault. Sexual assault prevention and victim/survivor care are too important to have a single point of failure. We have a comprehensive safety net of helping agencies for victim care that includes medical care, counseling, chaplains, peer support, law enforcement and a special victims' counsel—an independent legal expert who is with them every step of the way, if they choose. Leaders up and down the chain of command emphasize prevention through education and a healthy culture and climate.

Most recently, USAFA hosted a Pathways to Thriving Summit, 9–10 May 2018. The summit invited sexual assault victims and supporters, including current and former cadets and graduates, to discuss current issues and potential solutions, and was designed to give survivors a voice and open a dialogue on how to improve USAFA. In that same light, the Superintendent has offered to meet 1–1 with current sexual assault survivors. So far, a few, both men and women, have requested and met with the Superintendent.

Cadets receive two and a half hours of SAPR training yearly. These trainings address awareness, response, bystander intervention, and their role in preventing sexual violence. They are conducted in a variety of ways to include large group presentation, small group discussions, subject matter expert guest speaker presentations, classroom lessons, and squadron briefings. Additionally, educated peers are on-site in the squadron to answer any questions or provide resources if needed. Permanent

party to include instructors, commanders, coaches and staff receive annual training in their roles in sexual assault prevention and response.

Retaliation:

The issue of addressing retaliation is at the forefront of DOD and the service academies prevention strategy. DOD is developing action plans in five issue areas, which include standardizing definitions, improving data collection/analysis, building strong and supportive systems of investigation/ accountability, providing comprehensive support to reporters, and creating a culture intolerant of retaliation.

While there have not been any reports of retaliation made to USAFA leadership by cadets this year, we are aware of three cases that were reported through the USAFA Inspector General (IG) office and are now with the DOD IG for investigation. It is important to note that even if behavior does not meet the legal criteria to be considered reprisal, ostracism, or maltreatment that does not mean that the behavior cannot or will not be addressed in some manner. USAFA leadership has a wide range of options including discipline, education, etc., to address these behaviors regardless of how they are legally defined.

The USAFA IG provides training to SAPR personnel and Volunteer VAs on retaliation based on procedures for "Reporting and Tracking Victim Retaliation in Sexual Assault Cases". While the IG covers "retaliation", the training focuses primarily on "reprisal". Additionally, "reprisal" definitions/actions are covered during Newcomers, Cadet Squadron Leadership Training, 4-degree (freshman) Helping Agency Briefings, New commanders briefings, and semi-annual commanders' briefs.

When a victim meets with a VA or Special Victims' Counsel (SVC) to make a report of sexual assault, the VA and SVC are required to discuss retaliation/ostracism/ reprisal with the victim, to include the definitions. If the victim experiences any of those, they are encouraged to share the information with their VA/SVC. If the victim wishes to file a formal report to the appropriate agency, the VA/SVC will assist them. In addition, during the Case Management Group (CMG—a monthly meeting chaired by the Superintendent or Vice Superintendent which discusses the well-being of unrestricted victims of sexual assault) the SVC or VA is asked whether there have been any incidents of reprisal, ostracism, or retaliation. If a report of any of those is made, the case will remain open at the CMG until the allegation is resolved. Also, all reports of reprisal for sexual assault are investigated by DOD IG.

Sexual Harassment:

The Air Force goal is to continue to educate members on sexual harassment and encourage commanders to promote and maintain a healthy human relations climate, as well as foster teamwork and support in the workplace. Sexual harassment policies and procedures set forth in Air Force Instruction AFI 36–2706, Equal Opportunity Program, Military and Civilian; address mechanisms for reporting, responding to, and resolving incidents of sexual harassment, including procedures for reporting anonymously. The Air Force will continue to reinforce this guidance to ensure commanders and equal opportunity professionals are aware of their responsibilities when addressing sexual harassment concerns or allegations.

Specifically for cadets at the U.S. Air Force Academy (USAFA), equal opportunity program training starts the first week of basic cadet training when the basic cadets receive 1.5 hours of instruction on sexual harassment policies. This training continues throughout the 4-year cadet career. Permanent party members receive training upon assignment to the installation and then annually.

Formal Sexual Harassment Complaints Across the Air Force:

The number of substantiated formal complaints have slightly decreased since the fiscal year 2016 reporting period. In comparison, there were a total of 15 formal sexual harassment complaints lodged in fiscal year 2017; 18 in fiscal year 2016; 43 in fiscal year 2015 and 29 in fiscal year 2014. Females in the grades of E1–E4 continue to account for the majority of formal substantiated complaints which is consistent with previous years. Out of the 15 formal complaints filed in fiscal year 2017, 11 were substantiated and 4 were unsubstantiated. All formal complaints in fiscal year 2017 were reported to the General Courts Martial Convening Authority (GCMCA) within 72 hours of the commander receiving the complaint. Alleged offender demographics for fiscal year 2017 were consistent with previous years; the majority of first time offenders were identified as white, males in the graded of E–5 – E–6. The majority of final dispositions for substantiated formal complaints fell under the Administrative, Adverse or Administrative (not NJP) actions category, which was fairly consistent with final dispositions for fiscal year 2013—fiscal year 2016.

Informal Sexual Harassment Complaints Across the Air Force:

The Air Force equal opportunity informal complaint process allows members to address their sexual harassment concerns with their commander or local Equal Opportunity (EO) Office. There were a total of 145 informal sexual harassment com-

plaints processed in fiscal year 2017, as compared to 123 in fiscal year 2016 and 237 in fiscal year 2015. Out of 145 informal complaints, 102 were substantiated, 36 were unsubstantiated and 2 were still pending resolution at the time this report was completed. Five cases were dismissed.

Of the 145 informal complaints, commanders resolved 120 at their level. The complainant's gender demographics in substantiated informal complaints consisted of 19 males and 83 females, with the majority of complainants in the grades of E–1 thru E–4. The alleged offender's gender demographics consisted of 87 males and 7 females with the majority 29 in the grades of E–5 thru E–6. As compared to fiscal year 2016, gender and rank demographics were similar. The majority of final dispositions for substantiated informal complaints in fiscal year 2017 fell into the Administrative, Adverse or Administrative (not NJP) category, which was consistent with fiscal year 2016 and fiscal year 2015 dispositions.

UNIFORM CODE OF MILITARY JUSTICE/DOMESTIC VIOLENCE CHARGE

44. Senator HIRONO. Secretary Wilson and General Goldfein, in November 2017, I introduced the Military Domestic Violence Reporting Enhancement Act (S.2129), legislation to close a potential loophole in the processing of outcomes from a military court action related to the Uniform Code of Military Justice (UCMJ) that can allow convicted abusers to purchase firearms unabated when they should actually be placed in national databases to prevent such actions. The bill would close this dangerous loophole by creating a charge for domestic violence under the UCMJ, and could help prevent mass shootings such as the church shooting in Sutherland Springs, Texas in November 2017. Do you support legislation to help close loopholes and reduce the opportunities for individuals convicted of domestic violence to purchase firearms? Do you support this bill? If passed, will you make the administration of this legislation a priority?

Secretary WILSON and General GOLDFEIN. We share your concern of ensuring instances of domestic violence are appropriately handled and charged within the military justice system. We also stand committed to ensuring that those prohibited from possessing firearms under federal law are properly entered in appropriate federal databases. As such, we have supported legislation that strengthens the uniform application of reporting requirements under federal law, such as the recent Fix NICS Act (S. 2135).

While your proposed legislation will create a new punitive article specifically addressing domestic violence, such behavior has already been addressed by enhanced punishments for acts of domestic violence charged under the UCMJ committed against a spouse or intimate partner.

The Uniform Code of Military Justice already addresses the full spectrum of misconduct that falls under the broad topic of domestic violence and provides the authority to prosecute such cases through a number of offenses (for example, stalking, sexual assault, destruction of property, communicating threats, etc.). Domestic assault is encompassed under Article 128, Uniform Code of Military Justice, Assault. Adding a separate offense for domestic violence neither enhances the prosecution of these offenses nor better protects the victims. Currently, there is a well-defined body of case law regarding Article 128. A new offense would drive a requirement for clarification and interpretation through the appellate process, as the new offense develops its own case history. In addition, it potentially complicates an offense that historically enjoys a high conviction rate. By way of example, over the past two years the Air Force conviction rate in courts-martial with specifications of assault involving domestic violence charged under Article 128 is 82 percent.

It is important to note that even if a separate domestic assault charge, such as the one you are proposing, is created in the UCMJ, such an offense would not have prevented the failure in reporting the conviction of Devin Kelley in the FBI's National Crime Information Center (NCIC) database. The Air Force already annotates qualifying convictions for crimes of domestic violence on the Result of Report of Trial at time of conviction, independent of the offense charged. In the Kelley case, the Report of Result of Trial was properly annotated to indicate that the court-martial conviction was for a crime of domestic violence. This bill would not close a loophole. Even had Devin Kelley been convicted of a new separate domestic assault offense as proposed, this would not have changed the reporting requirements; requirements that, if followed, would have resulted in Devin Kelley's conviction being reported in NCIC.

In the end, the current UCMJ provisions, and their implementation by the Manual for Courts Martial give military justice practitioners the necessary tools to ensure crimes of domestic violence are effectively prosecuted and offenders are appropriately held accountable within the military justice system.

SIX DECADES OF ACQUISITION REFORM

45. Senator HIRONO. Secretary Wilson, since the establishment of the Department of Defense in 1947, the procurement process has been studied, enhanced, and improved over many decades with many commissions, blue-ribbon panels, think-tanks, and congresses looking at the issues. However, both Department officials and industry continue to mention the slow procurement processes that hinder acquisition and we continue to have significant cost overruns which impact public confidence in our use of tax-payer resources. In your testimony, you discuss that based on the fiscal year 2016 and fiscal year 2017 National Defense Authorization Acts, the Air Force is streamlining and improving its acquisition processes. Now with Dr. Roper being hired to the Assistant Secretary of the Air Force for Acquisition, Technology and Logistics, there is an opportunity to put ideas into action to recognize improvements and savings.

Secretary Wilson, can you provide a status on what you are doing to streamline your acquisition process? What timelines have you set for these actions?

Secretary WILSON. We are aggressively using the authorities for rapid prototyping and rapid fielding provided in section 804 from the fiscal year 2016 National Defense Authorization Act. Since the end of February, eight large activities—ranging from Next Generation OPIR to the B–52 re-engineering to hypersonics—are being accelerated. If properly resourced, over 25 years of total program acceleration could be achieved. We are presently working reprogramming to determine how much of this acceleration can be realized.

46. Senator HIRONO. Secretary Wilson, the Department reported that in fiscal year 2016 total operational energy demand for fuels was 85.7 million barrels. Air Force demand was 49.6 million barrels in fiscal year 2016 and over time has consistently been over 50 percent of the Department's total demand—primarily tied to Air Force aviation fuels. The Department and Air Force have issued a number of policies and procedures to ensure that the life-cycle costs of these fuel demands are incorporated in its acquisition processes, also referred to as the fully burdened cost of energy. What actions over the last year has the Air Force taken to ensure the fully burdened cost of energy has been integrated into your acquisition process? What are the next steps for the Air Force to ensure energy priorities are incorporated in acquisition processes?

Secretary WILSON. In the past year, the Air Force has updated our key acquisition guidance, Integrated Life Cycle Management, Air Force Instruction 63–101/20–101, to include the cost of energy and fully burdened cost of fuel into the Systems Engineering Design Considerations section. This has led to the incorporation of energy demand in the system trade space along with other performance issues to support informed decision-making.

To ensure energy priorities are incorporated in the acquisition process, the Air Force is including operational energy considerations before an acquisition program even begins. Energy Key Performance Parameters are now mandatory components of requirements documentation.

47. Senator HIRONO. Secretary Wilson, how are you integrating recruitment and retention of a skilled acquisition workforce into these actions?

Secretary WILSON. To support operational energy considerations into our acquisition processes the Air Force has worked diligently to recruit and retain science, technology, engineering and mathematics talent at our laboratories and in our systems engineering shops. We are appreciative of the Congressional adds for alternative energy research and the Operational Energy Capability Improvement Fund that enable our workforce to research and test innovative technologies that will improve our operational effectiveness.

48. Senator HIRONO. Secretary Wilson, what additional changes would you recommend to improve the acquisition process?

Secretary WILSON. I recommend the following changes to improve the acquisition process:

1. Delegate cost and fielding target approval to Milestone Decision Authority (MDA). Section 807 of the fiscal year 2016 National Defense Authorization Act requires program cost and fielding targets be approved by the Secretary of Defense/Deputy Secretary of Defense. We believe the change to the MDA is aligned and consistent with the push of acquisition authorities to the Services.
2. Delegate responsibility for conducting independent cost estimates down to the same level as the Milestone Decision Authority. Currently 10 U.S.C. § 2334, Independent cost estimation and cost analysis, requires the Office of Cost As-

sessment and Program Evaluation to conduct or approve independent cost estimates and cost analyses for all Major Defense Acquisition Programs no matter who is the Milestone Decision Authority.

NORTH KOREA—AIR FORCE NUCLEAR DETERRENCE CAPABILITIES

49. Senator HIRONO. Secretary Wilson and General Goldfein, I take the threat of North Korea launching a ballistic missile toward the United States and the state of Hawaii very seriously. And, the false alarm alert of an incoming ballistic missile in Hawaii forced us to learn a hard lesson on this matter. In your testimony, you discuss that nuclear deterrence underpins national security for the U.S. and our allies, and that the Air Force operates 75 percent of the nuclear command, control, and communications capabilities. Despite what is being reported about North Korea willing to stop its testing of nuclear missiles, we must remain vigilant against this threat. We must ensure the appropriate measures are taken so that North Korea, as well as other adversaries are deterred from using ballistic missiles.

Secretary Wilson and General Goldfein, is the Air Force's current nuclear deterrent capabilities sufficient to deter our adversaries from a nuclear attack?

Secretary WILSON and General GOLDFEIN. As reflected in the 2018 Nuclear Posture Review (NPR), the U.S. Nuclear Triad of land-, sea-, and airborne-based nuclear delivery systems is the most cost-effective and strategically sound means of ensuring nuclear deterrence. Although the Air Force's current nuclear capabilities contribute to successful deterrence of nuclear attack by our adversaries today, to remain effective we must recapitalize all of our Cold War legacy nuclear forces. The United States has initiated a series of programs to sustain and replace existing nuclear capabilities before they reach the end of their service lives. These programs, along with modernized dual-capable aircraft and associated nuclear command and control, will be critical to preserving our ability to continue to deter existential threats to the Nation.

50. Senator HIRONO. Secretary Wilson and General Goldfein, what Air Force nuclear deterrent capabilities can be strengthened in the future to better counter current and future adversary capabilities in this domain?

Secretary WILSON and General GOLDFEIN. As stated in the 2018 Nuclear Posture Review (NPR), to address the changing threat and operating environments, we must modernize all components of the Nuclear Triad, including our dual-capable aircraft, and the nuclear command, control, and communication (NC3) systems that enable their effectiveness. We need replacements for Cold War-era ICBMs and air launched cruise missiles, which were last modernized in the 1980s and which will not keep pace with these evolving environments. The NPR commits to fielding the B–21 while sustaining and modernizing the B–52 to ensure it remains effective into the future. Our Long Range Stand Off missile will replace the air launched cruise missile and ensure the bomber force can continue to hold high-value targets at risk in an evolving threat environment, to include targets within an anti-access environment. The Ground based Strategic Deterrent delivers an integrated weapon system to replace ICBM requirements. We are also incorporating nuclear capability onto the F–35 to be used as a replacement for our current aging dual-capable aircraft. Finally, we need to modernize the integrated NC3 systems to ensure secure, survivable connectivity with the President and national command leadership.

EAGLE VISION

51. Senator HIRONO. General Goldfein, Eagle Vision is a deployable ground station capable of downlinking commercial, unclassified remote-sensing satellite imagery and rapidly processing the data into a variety of formats. It is a unique capability that provides releasable imagery for United States and allies, DHS, FEMA and HADR assistance in the U.S. and world-wide in a timely and expedient manner—minutes/hours as opposed to days. With the increased level of severe weather incidents in the Pacific and elsewhere, our National Defense Strategy to improve and increase our relationships with friends and allies, Eagle Vision provides a cost-effective capability with a high return on investment.

General Goldfein, will you commit to working with me to do what you can to ensure that this valuable capability is kept ready and capable to provide support in exercises as well as actual HADR missions?

General GOLDFEIN. In recent fiscally constrained environments, Eagle Vision, like many other Air Force programs, was forced to be funded at minimum levels. Now the program will be funded at ready and capable levels.

Over the past two years, Eagle Vision worked Theater Security Cooperation initiatives with partners, provided intelligence support, worked National Guard State

Partnership programs, and was used for Combatant Command outreach and support. It also satisfied data requests from numerous humanitarian and disaster response requests from in garrison. Eagle Vision's great utility for partnership engagement led us to ask the Air National Guard to take control of Eagle Vision beginning in fiscal year 2019. The Guard are experts in these mission areas.

SPACE CAPABILITIES

52. Senator HIRONO. General Goldfein, in your remarks at the 34th Space Symposium this April, you emphasized that each Airman, should understand the business of space superiority. And, that we are strongest when we fight together with our allies and partners in this integrated battlefield. In Hawaii, we also see the value of space superiority. Hawaii is the home of the Maui Space Surveillance Site (MSSS), which is the only facility of its kind in the world that provides state-of-the-art electro-optical capabilities for space situational awareness.

General Goldfein, can you provide an update on the MOU between Space Command, NRO and AFMC which I understand is up for renegotiation? The MSSS provides a great resource for the signatories.

General GOLDFEIN. A new Memorandum of Agreement for Maui space Surveillance Site is being worked by the Air Force Research Lab. There will be two bilateral Memoranda of Agreement replacing the original Memorandum of Understanding. There will be a Memorandum of Agreement between Air Force Research Lab and Air Force Space Command, and a Memorandum of Agreement between Air Force Research Lab and National Reconnaissance Office. The Memorandum of Agreement will capture requirements and mission needs for the next five years, to include sustainment of infrastructure, operations and research. I do not expect any major shifts or impacts to operations, research or mission as a result of these new Memoranda.

53. Senator HIRONO. General Goldfein, what are some areas that you believe we could make greater investments in the space domain? What types of integrated cyber defensive and offensive capabilities are incorporated into your thinking?

General GOLDFEIN. The Air Force is the best in the world at space, and our adversaries know it. Since the 1950s, we have been the leader in National Security Space. Until recently, space was a benign frontier. Space doesn't just affect the military, most Americans use space every day. America's military space assets are integrated into 100 percent of operations.

The stakes are high and America's leadership is aligned in recognizing space as a warfighting domain. In an era of great power competition, Russia and China continue to develop anti-satellite capabilities that could become operational in the next few years. We will continue to make bold moves to accelerate defendable space and protect the interests of America and our allies.

The fiscal year 2019 space budget allows us to posture ourselves to meet the challenges of tomorrow. In the coming years, our military will undertake steps to ensure we build a more lethal, resilient and agile force. The Air Force will invest in expansive architecture to ensure multi-domain operations. Acquisition processes will be standardized. We will continue to work with our allies and industry partners to develop an Air Force prepared to deter, defend and prevail in space.

Currently, the USAF has four main Defensive Cyber Operations initiatives related to the space domain. These four initiatives include:

1. Implementing the Cyber Squadron-Initiative to provide persistent active cyber defense for weapons system that will be building out by one wing per year;
2. Establishing a Cyber Defense Correlation Center for Space that will report to the 24th AF Cyber Defense Operations Center;
3. Completing the ongoing AF Materiel Command led weapons systems cyber evaluations of space systems using the insights to improve cybersecurity throughout the acquisition process system lifecycle for space systems; and
4. The Air Force is expanding the Cybersecurity Service Provider role from administrative systems to include space mission systems. This will initially provide limited passive cybersecurity to AF weapons systems enhancing our situational awareness. In fiscal year 2018, Cybersecurity Service Providers are being established initially in the missile warning and protected communication mission areas with additional space mission areas to follow in subsequent fiscal years.

54. Senator HIRONO. General Goldfein, can you discuss the importance in using a whole-of-government approach to work with our allies and partners in this integrated and interdependent battlefield?

General GOLDFEIN. The Air Force and DOD routinely collaborate with Interagency partners and directly support the National Security Council and National Space Council to develop and implement national space policies and strategies. And as commercial space capabilities continue to expand, the Air Force and DOD will continue to work closely with commercial partners to augment our capabilities and more quickly develop more capable and resilient space systems.

CYBER SECURITY: NATIONAL STRATEGY AND PLAN

55. Senator HIRONO. Secretary Wilson and General Goldfein, committee witnesses have expressed significant concern related to the number of illicit cyber actors worldwide. For example, Russia and China have incorporated cyber into their joint warfighting doctrine and routinely exercise these capabilities. We have also seen the lengths Russia has gone to disrupt our democracy in United States elections. China values cyber so highly it has created its Strategic Support Force to consolidate, integrate, and synchronize cyber operations.

Secretary Wilson and General Goldfein, as our adversaries, such as China and Russia, continue to consolidate and integrate their cyber operations, are we losing a competitive advantage by not doing so as well?

Secretary WILSON and General GOLDFEIN. Gaining and maintaining an information advantage is critical to all aspects of warfighting and warrants necessary near- and long-term investment. Each service needs to operate and fight uniformly in the joint environment and simultaneously bring our own complementary, service-unique cyber operations capabilities to bear.

The Air Force is balancing cyber operations requirements of our joint combatant command partners, as well as our institutional requirements. Air Force cyber warriors are operating globally as a maneuver and effects force in this contested domain, delivering cyber superiority for our Service and joint partners. Cyber operations personnel exist to preserve our freedom of maneuver in, through and from air, space and cyberspace while denying our adversaries the same.

56. Senator HIRONO. Secretary Wilson and General Goldfein, do you believe the U.S. should develop a national strategy to consolidate and integrate our cyber operations? What is the greatest concern to you by a lack of national cyber strategy?

Secretary WILSON and General GOLDFEIN. The fiscal year 2018 NDAA directed the President to deliver to the appropriate congressional committees a report on his policies relating to cyberspace, cybersecurity, and cyber warfare. As one of the Armed Services, our role is to train, organize, and equip the Air Force. The Air Force remains committed to nesting and aligning our Service's cyberspace efforts outlined in the DOD Cyber Strategy as well as to applicable national policies and/or strategies.

ENERGY RESILIENCE AND ASSURANCE

57. Senator HIRONO. Secretary Wilson and General Goldfein, the need to reduce energy consumption, use alternative energy sources, and increase energy resilience and assurance is closely tied to our national security. I am concerned of threats in the Pacific region that could disrupt fuel delivery or electricity supplies. In the region, DOD relies on vulnerable fuel and electric supplies to conduct its military operations, where electric power outages on military bases or fuel supply disruptions could disrupt critical military operations. Specifically, the Department and the military services have documented, for example, that deferred maintenance or the lack of testing associated with energy systems and infrastructure on military installations can lead to disruptions to critical defense missions.

Secretary WILSON and General GOLDFEIN. Consistent with the National Security Strategy, the Air Force is committed to supporting energy initiatives that will attract investments, safeguard the environment, and strengthen our energy security. For the Air Force, this means prioritizing projects which improve our energy resilience, followed by those projects which only result in cost savings or renewable project development where the power is going to the electric grid, but made available to an installation in time of power disruption, as opposed to only serving the installation.

58. Senator HIRONO. Secretary Wilson and General Goldfein, where is the Air Force prioritizing its energy needs in this budget request? Can you provide a description of these priorities in terms of both operational fuel and delivery of electricity to your military installations?

Secretary WILSON and General GOLDFEIN. Air Force missions require uninterrupted access to electricity and are currently reliant upon an increasingly fragile

and outdated U.S. electric grid. The Air Force, through a combination of 3rd-party and direct funding, is funding initiatives to identify and implement comprehensive approaches to energy challenges, and ensure access to resilient, cleaner, cost-competitive power. $20 million of the Air Force's Operations & Maintenance funding from the Facility Sustainment, Restoration, and Modernization (FSRM) account will go towards stand alone, direct energy opportunities. The Air Force also gets indirect energy benefits when it sustains or recapitalizes facilities (e.g., replacing a HVAC system gives us a more energy efficient and reliable HVAC system); the Air Force estimates this cost to be about $156 million.

59. Senator HIRONO. Secretary Wilson and General Goldfein, can you commit that that Air Force will prioritize energy resilience and assurance at military installations and facilities to ensure you can accomplish your core Air Force missions? Specifically, will you prioritize installation energy systems and infrastructure, and the maintenance and testing of these systems to ensure your mission requirements are met?

Secretary WILSON and General GOLDFEIN. Air Force missions require uninterrupted access to electricity and are currently reliant upon fragile electric grid. Through a combination of 3rd-party and direct funding, the Air Force is funding initiatives to identify and implement solutions to energy challenges, and ensure access to resilient power. The Air Force is committed to enhancing mission assurance through energy assurance by improving its energy resiliency, reducing our demand, and assuring our energy supplies.

60. Senator HIRONO. Secretary Wilson and General Goldfein, air and space superiority, and intelligence, surveillance, and reconnaissance are clearly highlighted as two of the five core Air Force missions and priorities in your testimony. Has deferred maintenance or the lack of testing on energy systems and infrastructure on military bases caused the degradation or failure of these core Air Force missions, which enable key areas such as space situational awareness and ballistic missile detection and defense?

Secretary WILSON and General GOLDFEIN. Ready and resilient Air Force installations are critical, integral components to support the priorities of the Air Force to build a more lethal and ready force. However, the Air Force has chosen to accept risk in the infrastructure accounts in order to allocate resources to high priority warfighting readiness and modernization requirements in an era of limited funding. Deferring these investments will likely increase sustainment and restoration costs over the long-term. Denial of service due to the loss of energy supplies has generated challenges. For example, due to an extended loss of commercial power to Incirlik Air Base in 2016, facilities were required to run on internal generated power to sustain operations and the Air Force flew in supplies, including food, water and fuel, in order to sustain missions.

QUESTIONS SUBMITTED BY SENATOR ANGUS S. KING

F–35 SUSTAINMENT COSTS

61. Senator KING. General Goldfein, you've previously acknowledged that F–35 operations and sustainment costs are a major concern, and the U.S. Government Accountability Office projected in 2017 that total sustainment costs over the life of the F–35 program could amount to more than $1 trillion during a 60-year life cycle. As the Air Force is the largest customer of the F–35, what steps are being taken to reduce the operations and sustainment costs to reach the same levels as current fourth generation fighters?

General GOLDFEIN. F–35 sustainment costs are a concern and as the program matures, we are focusing efforts on reducing the sustainment cost of the F–35. We will continue to work closely with the Joint Program Office (JPO) and industry to evaluate and analyze actual data. JPO's affordability war room is dedicated to reducing operations and sustainment costs. The affordability war room includes participants from JPO, Services, Office of Secretary of Defense and industry.

PILOT SHORTFALLS

62. Senator KING. Secretary Wilson, what is the Air Force doing to address its pilot shortage issue?

Secretary WILSON. To achieve this, the Air Force is focusing on three main lines of effort: increased retention of current pilots, increased production of new pilots, and optimizing pilot requirements. The Air Force has an Aircrew Task Force that

is implementing a plan with major efforts in each of these areas. The unexplained physiological episodes in a small number of aircraft will directly affect production, but does not alter the Air Force plan.

63. Senator KING. Secretary Wilson, how are you making long-term careers a more attractive option for our most talented pilots?

Secretary WILSON. The Air Force has already made strides in increasing retention though the reduction of individual deployments, the introduction of contract administrative support to flying squadrons, the improvement of assignment management through IT modernization, and the introduction of an expanded pilot bonus. There is still more to do. The Air Force is continuing to increase retention in two ways. First, we are improving quality of service and work/life balance through further reduction of non-flying duties, the right-sizing of operational tempo in units, incentivizing individual deployments, and the exploration of a possible "fly-only" track. Second, the Air Force is examining compensation reform designed to modernize incentives to continue service.

QUESTIONS SUBMITTED BY SENATOR MARTIN HEINRICH

64. Senator HEINRICH. Secretary Wilson and General Goldfein, I was pleased to see the Air Force include $47.6 million in its budget request for procurement of small satellite launch and rideshare services. I agree that a responsive and resilient launch architecture is important for preserving our dominance in space. Currently, all of our launch facilities are on the coastline competing with busy commercial air corridors, and they could be targeted in a contested environment.

In recent years, inland Space Ports have been built for commercial purposes, but they also have significant military value. Spaceport America, for example, partners with White Sands Missile Range. There are also several emerging commercial launch providers capable of launching from runways at inland spaceports, and I am glad the Department is giving them a closer look with the new Small Launch Service program.

Given the nation's increased dependence on satellites, the replenishment cycle of current defense satellite constellations, and the increasing global threats to U.S. national security assets in space, has the Air Force conducted a vulnerability assessment of continuing to rely solely on coastal space launch locations?

Secretary WILSON and General GOLDFEIN. Vulnerability assessments are maintained for all installations and the DOD will continue to explore use of non-federal launch sites, to include inland spaceports, to support National Security Space launches as we contract for launch services. There are emerging launch providers that show promise as we work to provide resiliency options, particularly for small to medium-class launches. Some of these providers are exploring use of inland spaceports.

65. Senator HEINRICH. Secretary Wilson and General Goldfein, in a contested environment, what value could a protected inland space launch facility and emerging small launch providers offer to the Department in terms of a disaggregated launch?

Secretary WILSON and General GOLDFEIN. Inland space launch facilities could offer options in providing additional secure launch facilities, primarily with emerging small launch providers by conducting airport style operations using reusable launch vehicles, though public safety must be balanced with mission profiles. The Air Force, when contracting for launch services, takes all aspects and requirements in consideration when awarding a launch contract. The advantage of coastal launch facilities is related to range safety in the event of launch failure, which happens over water rather than inhabited areas. Safety assessments may change over time as reusable vehicles and smaller launch systems approach reliability and safety confidence levels we have come to expect from aircraft or industrial operations.

JOINT DIRECTED ENERGY TEST CENTER

66. Senator HEINRICH. Secretary Wilson, the Air Force proposed a "Joint Directed Energy Test Center" in its Directed Energy Flight Plan. I fully support this proposal, which is aimed at providing more rapid and cost effective testing and fielding of directed energy weapon systems. Doing so could also allow the broad, standardized collection and evaluation of data at the High Energy Laser System Test Facility (HELSTF) to establish test references and support policy decisions in a more reliable fashion. What is the status of the Joint Directed Energy Test Center proposal?

Secretary WILSON. OSD Test Resource Management Center is overseeing the Joint Directed Energy Test Center study.

67. Senator HEINRICH. Secretary Wilson, what are the infrastructure and personnel needs at HELSTF to accommodate the growth and maturity of directed energy weapon systems across the military services?

Secretary WILSON. It is premature for the Air Force to comment on infrastructure and personnel needs prior to the release of the Joint Directed Energy Test Center study from the Test Resource Management Center.

LIGHT ATTACK AIRCRAFT

68. Senator HEINRICH. Secretary Wilson, I understand that the Air Force is planning to spend $2.4 billion over the next five years for rapid fielding and procurement of light attack aircraft. Does the Air Force intend to field the aircraft concurrently between the Active and Reserve components?

Secretary WILSON. Concept of operations development is currently underway as well as the basing strategy and a decision on the component mix is expected late this summer or in the fall.

69. Senator HEINRICH. Secretary Wilson, do you think the light attack aircraft mission is one that the Air National Guard and Air Force Reserve will thrive in while providing maximum lethality in a fiscally responsible fashion?

Secretary WILSON. At this time, a concept of operations is under development. The Air Force has not made a basing decision for the light attack aircraft mission. We are exploring for a potential acquisition effort. If we procure aircraft, we will consider total force basing options. The Air Force will consider putting some light attack aircraft in the Guard or in Active Associate units. The ability of Guard units to develop close partnerships with Allies has been well demonstrated.

DEPARTMENT OF DEFENSE AUTHORIZATION FOR APPROPRIATIONS FOR FISCAL YEAR 2019 AND THE FUTURE YEARS DEFENSE PROGRAM

THURSDAY, APRIL 26, 2018

UNITED STATES SENATE,
COMMITTEE ON ARMED SERVICES,
Washington, DC.

DEPARTMENT OF DEFENSE BUDGET POSTURE

The committee met, pursuant to notice, at 9:29 a.m. in Room SH–216, Hart Senate Office Building, Senator James M. Inhofe, presiding.

Committee Members present: Senators Inhofe, Wicker, Fischer, Cotton, Rounds, Ernst, Tillis, Sullivan, Perdue, Cruz, Graham, Sasse, Scott, Reed, Nelson, McCaskill, Shaheen, Gillibrand, Blumenthal, Donnelly, Hirono, Kaine, King, Heinrich, Warren, and Peters.

OPENING STATEMENT OF SENATOR JAMES M. INHOFE

Senator INHOFE. Our meeting will come to order.

The committee today meets to receive testimony on the budget posture of the Department of Defense [DOD] and the fiscal year 2019 request and the future years defense program.

We welcome our witnesses: Secretary of Defense Mattis, Under Secretary Norquist, and the Chairman of the Joint Chiefs, General Dunford.

Secretary Mattis, we wish to commend you for your work in developing a strategy that correctly prioritizes the current threats that we face. Now comes the more difficult task and that is implementing the strategy. We agree on the strategy, but it has got to be implemented.

One of Chairman McCain's priorities has been considering if the Department is properly structured to take on this huge task. And as the committee looks toward the upcoming NDAA [National Defense Authorization Act] process, we welcome your thoughts about what we can do to help you.

In the end, we must recognize that even if we get the strategy and structure exactly right, you cannot be successful if Congress does not deliver the resources needed to implement this strategy. We know how damaging that can be and has been, as we have time and again failed to do our job by passing appropriations bills, instead passing CR [continuing resolution] after CR. We welcome

your testimony about exactly how this would impact it. In fact, that will be one of my first questions as to what would happen if we had not done this and what will happen if we do not do it again for 2020 and ensuing years.

This is especially important because we are not yet out of the woods on sequestration. Although we did come to a budget agreement for this year and the next, we still have to go back and try to take care of the problems that will be in 2020 and ensuing years after that.

We cannot dig ourselves out of the current readiness crisis in just 2 years. It will take much longer to undo the damage that has been done in the past 8 years to our military, and the lack of any real growth in the future years defense program exemplifies this.

So we look forward to your testimony and thank you for being here and for the great job that you continue to do year after year.

Senator Reed?

STATEMENT OF SENATOR JACK REED

Senator REED. Thank you very much, Mr. Chairman.

And I want to join you in welcoming the Secretary of Defense, the Chairman of the Joint Chiefs of Staff, and the Comptroller. Thank you, gentlemen for your service to the Nation over many, many years—your continued service.

Today we are considering the fiscal year 2019 budget for the Department of Defense, which seeks $617 billion in base funding and $69 billion for overseas contingency operations. Fortunately, we find ourselves in a moment of budget stability, having passed an agreement in February that removed the threat of sequestration for fiscal years 2018 and 2019 and added funding for both defense and non-defense programs. However, additional challenges loom on the horizon, as the caps and sequestration will be back in force for fiscal year 2020. As the chairman mentioned, we still have to focus on that issue.

Secretary Mattis, I commend you for the careful and thoughtful and hard work that went into the National Defense Strategy, or NDS. It accurately recognizes that the central challenge facing our Nation is the reemergence of long-term strategic competition with Russia and China. I am also pleased to see that the President's Budget reflects the beginnings of investment in some of the technologies we will need for this competition, such as hypersonics and artificial intelligence.

However, the perennial challenge facing any Secretary of Defense is preparing for the future while reacting to the present. And unfortunately, there are many urgent situations not delineated in the NDS that will require our attention in the coming weeks and months.

At the present time, the White House is attempting to focus its efforts on negotiating an agreement to denuclearize North Korea. Given where we were a few months ago when the administration was threatening limited strikes on North Korea, I am relieved to say we have come a long way, but we still have a long, hard road ahead.

We all hope that President Trump's summit with the North Korean leader presents us with an opportunity to craft a comprehen-

sive negotiated settlement. However, we must recognize that if the negotiations fail and if that happens, we could find ourselves in a more challenging position than before the negotiations with a renewal of dangerous rhetoric about war with North Korea, but now more supercharged by those advocating for military action, claiming that diplomacy has failed.

While working through these issues with a depleted diplomatic corps, the President must also decide by May 12 whether to continue to waive nuclear-related sanctions on Iran as required by the Joint Comprehensive Plan of Action, or JCPOA. I support preserving the JCPOA. The United States and the world is safer with it. By all accounts, the JCPOA is working as intended, and Iran is verifiably meeting its commitments under the deal. If not for this agreement, Iran would likely be a nuclear power today, and withdrawing from it could accelerate Iran's path to nuclear weapons and make America less safe.

Furthermore, withdrawing from the deal could be a devastating blow to our efforts at diplomacy with North Korea and, for that matter, any further diplomatic efforts to contain aggressive or destabilizing behavior by our adversaries. Why would any nation engage with us in serious dialogue to resolve differences if they fear we will later withdraw unilaterally and without cause? Furthermore, abandoning the JCPOA would isolate the United States diplomatically from the international community at the very time we need worldwide cooperation to address the threat posed by North Korea.

Additionally, President Trump's mixed messages about our military commitment to Syria could accelerate the declared intentions of Israel to conduct more sustained attacks against Iranian forces and proxies in Syria and Lebanon. The level of violence and Iran's reaction are unlikely to be restricted to Syria and a confrontation including Iraq, Saudi Arabia, and others in the region is a real risk.

If any of these situations becomes a crisis, it is going to take all the attention and resources of the Department of Defense. So I am interested in hearing more about how you plan to balance the present and the future.

Turning back to the NDS, when we think about great power competition, we tend to think and plan for conventional conflict. But I believe we must take into account that much of the threat already posed by China and Russia is asymmetric.

The growing Russian asymmetric threat below the level of military conflict continues to target the United States, our allies, and partners. Russia attacked the heart of our democracy in the 2016 presidential election through a Kremlin-directed hybrid warfare campaign using all tools of national power. Because we have failed to impose sufficient costs for this assault, not only has Russia not been deterred, it has been emboldened and we are already seeing Russian attempts to interfere with the 2018 midterm elections. I am interested in hearing what is being done to harden our defenses and develop a whole-of-government approach that utilizes both the military and non-military tools in our arsenal to counter this Russian aggression.

We should also keep in mind that by next spring, the Congress will be debating whether to raise sequestration caps once again, as the chairman mentioned. I have learned from my time in Congress that if you show me your budget, I will tell you your strategy. But what will happen to the NDS if we return to the Budget Control Act [BCA] caps? This debate will be colored by concern about the debt, which was made worse by the $1.5 trillion deficit-financed tax cuts passed last year. In CBO's [Congressional Budget Office] recent projection, debt held by the public rises from 78 percent of GDP [gross domestic product], or $16 trillion, at the end of 2018 to 96 percent of GDP, or $29 trillion, by 2028. That percentage would be the largest since 1946 and well more than twice the average over the past 5 decades.

The growing deficit and impending sequestration will have severe consequences. They will constitute a major distraction from thoughtful debate and responsible action on the issues of national security. They will likely lead to stopgap measures like recurring continuing resolutions that disrupt planning at DOD and every other federal agency and, ironically, add cost and inhibit readiness and modernization. If our Nation's fiscal strategy does not take into consideration the need for revenue, deficit-driven measures like these will likely make it exceedingly difficult to follow through with a long-term strategy with regard to any serious challenge facing us from the international arena.

Secretary Mattis and General Dunford, you have been consummate professionals. You have served in tumultuous times. We face many difficult decisions ahead. We are all gratified and, indeed, grateful that you are where you are.

I look forward to working with you and all of my colleagues in a bipartisan fashion to help you and help us all resolve these issues.

Thank you very much, Mr. Chairman.

Senator INHOFE. Thank you, Senator Reed.

For our panel, all of your statements will be a part of the record, but you are recognized for your opening statement, General Dunford. Let us start with Secretary Mattis.

STATEMENT OF THE HONORABLE JAMES N. MATTIS, SECRETARY OF DEFENSE; ACCOMPANIED BY THE HONORABLE DAVID L. NORQUIST, UNDER SECRETARY OF DEFENSE, COMPTROLLER

Secretary MATTIS. Senator Inhofe, Ranking Member Reed, and distinguished members of the committee, I appreciate this opportunity to testify in support of the President's Budget Request for fiscal year 2019.

And General Dunford and I are joined by Mr. David Norquist, the Department's Comptroller and Chief Financial Officer.

Thank you for accepting my written statement for the record, Chairman.

I am now in my second year as Secretary of Defense. And with your help, we have made steady progress during the past 14 months. I must note today's absence of Chairman McCain, a longstanding, respected, even revered member of this committee and

one whose influence is deeply felt and echoed in our National Defense Strategy.

In January, the Department published that strategy, the first 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 great power 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 our allies.

In South Asia and Afghanistan, uncertainty in the region has been replaced by the certainty of the administrations? South Asia Strategy. Concurrently in the Middle East, we have dramatically reduced ISIS' [Islamic State of Iraq and Syria] 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 to 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 the omnibus spending bill that funds the government for the remainder of this fiscal year. This law, along with the 2-year budget agreement passed as part of February's Bipartisan Budget Act, finally freed us from the inefficient and damaging continuing resolution funding process, now providing the predictable and sufficient funding needed to continue implementing the 2018 National Defense Strategy.

Our fiscal year 2019 budget requests the resources necessary to fulfill the Department's enduring mission, to provide the combat-credible military forces needed to deter war and, if deterrence fails, to win in any conflict. These forces reinforce America's traditional tools of diplomacy, ensuring that the President and our diplomats negotiate from a position of strength.

To restore our Nation's competitive military edge, the fiscal year 2018 budget funds our National Defense Strategy's three overarching lines of effort: first, to build a more lethal force; second, to strengthen our traditional alliances while building new partnerships; and third, reform the Department's business practices for performance and affordability.

Our first line of effort is to build a more lethal force. All our 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, yesterday's weapons, or yesterday's equipment. As President 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 today our lethal military arm will enhance our diplomats' 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. We must be able to fight across the entire spectrum of combat. The Nation must field sufficient capable forces to deter conflict, and if deterrence fails, we must win. Following this logic,

we must maintain a credible nuclear deterrent so these weapons are never used and a decisive conventional force that includes irregular warfare capability.

Preserving the full range of our Nation's deterrent 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 and our nuclear command and control is the Department's top priority, and these programs are fully funded in the fiscal year 2019 budget.

The 2019 budget further funds enhancements to the U.S. missile defense capabilities to defend the Homeland, our deployed forces, allies, and partners against an increasingly complex 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 proposed budget will modestly increase the end strength for the Army, Navy, Air Force, and Marine Corps to restore readiness, adding 25,900 to the active and reserve force. The budget will also continue to invest in the military's most important asset, its warfighters, with a 2.6 percent military pay increase.

The 2019 budget continues to increase procurement of preferred and advanced munitions, a necessity due to the ongoing operations in the Middle East and the need for war reserves. Ten combat ships and eight support ships are funded, arresting the downward trajectory of our Navy's size and lethality. We will continue production of 77 F–35's and 24 F–18's, evaluating the performance of both to determine the most appropriate mix moving forward.

This budget requests funds for systems to enhance communications and resiliency in space, addressing overhead persistent infrared capabilities, positioning, navigation, and timing, plus space-launched systems.

Our 2018 National Defense Strategy also prioritized investing in technological innovation to increase lethality, and that continues in this budget. Cyber, advanced computing, big data analytics, artificial intelligence, autonomy, robotics, miniaturization, additive manufacturing, directed energy, and hypersonics are the very technologies we need to fight and win wars of the future.

Every investment in the strategy-driven fiscal year 2019 budget is designed to contribute to the lethality of our military, ensuring that subsequent secretaries of defense inherit a military force that is fit for its time. Those seeking to threaten America's experiment in democracy should know if you challenge us, it will be your longest and worst day.

Our 2018 National Defense Strategy second line of effort is continued this year to strengthen our 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 I fought in a solely American formation. It was always alongside foreign troops. Easier said than done, Winston Churchill noted 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. Working by, with, and through allies

and partners who carry their fair share remains a source of strength for the United States.

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 [North Atlantic Treaty Organization] Resolute Support mission in Afghanistan. This year, every NATO ally has increased defense spending, and 15 NATO allies are increasing their defense budget as a share of the gross domestic product, giving credence to the value of democracies standing together. Further, our Pacific partners are also strengthening their defenses.

Our third line of effort is the urgent reform of the Department's business practices to provide both solvency and security. We will continue to establish a culture of performance where results and accountability matter on every expenditure to gain full benefit from every single taxpayer dollar spent on defense. We are committed to exercising the utmost degree of financial stewardship and budget discipline within the Department. In this regard, this year we will deliver our Department's first full financial audit in history. We will find the problems it reveals and take swift action to correct our deficiencies, thereby earning the trust of Congress and the American people.

I am confident we 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 Under Secretary of Defense for Acquisition and Sustainment, Michael Griffin as Under Secretary of Defense for Research and Engineering, Bob Daigle as Director of Cost Assessment and Program Evaluation, and David Norquist who joins us here today, as the Department's Chief Financial Officer. Each brings the intellect, the energy, and experience required to implement and sustain meaningful reform, ensuring the Department provides performance and affordability for the American taxpayer.

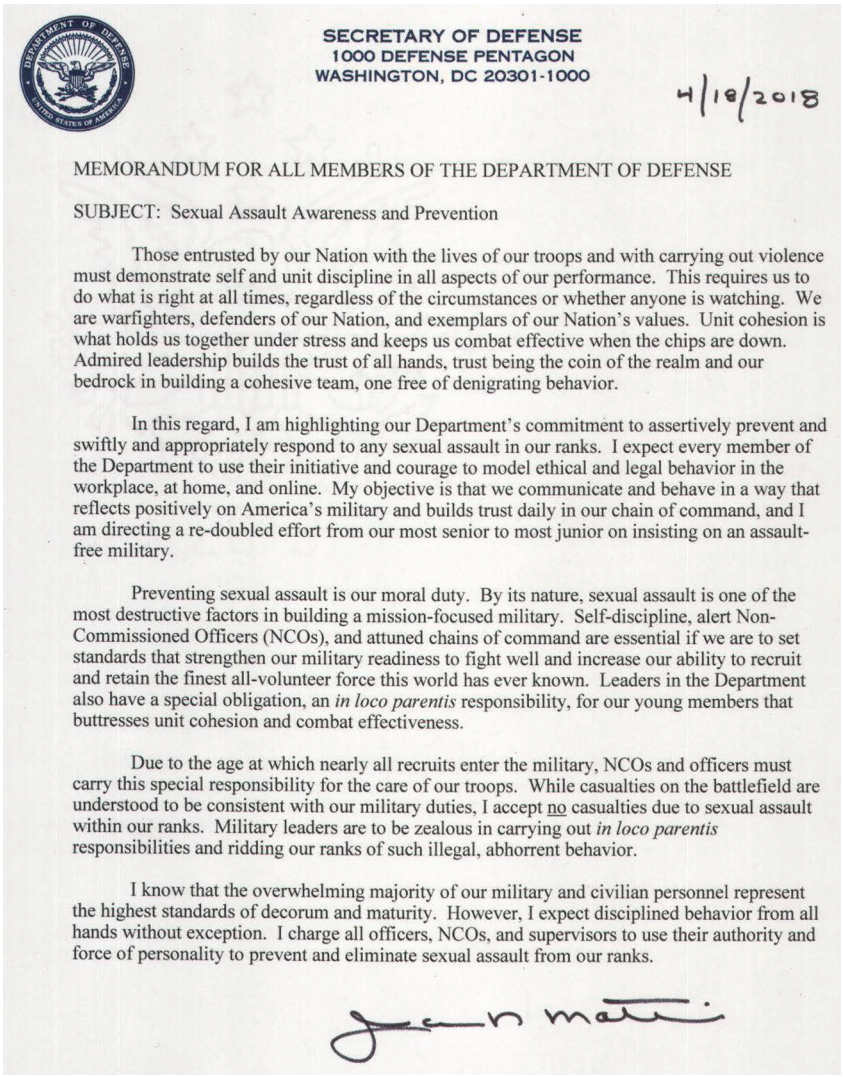
The Department is transitioning to a culture of performance and affordability that operates at the speed of relevance. We will prioritize speed of delivery, continuous adaptation and frequent modular upgrades. With your continued critical support, we will shed outdated management and acquisition processes while adopting American industries' best practices. Our management structure and processes are not engraved in stone. They are a means to an end. If current structures inhibit our pursuit of lethality, I have directed service secretaries and agency heads to consolidate, eliminate, or restructure to achieve their mission.

Here I will note that I have also issued direction about a particular cancer in our ranks: sexual assault. Unit cohesion built on trust and mutual respect is what holds us together under stress and keeps our forces combat effective against daunting odds. This Department is committed to assertively preventing and swiftly responding to any sexual assault in our ranks. While battlefield casualties are a reality of war, we will accept no casualties due to sexual assault in our military family. I personally discussed this with

all senior Department leaders. Earlier this month, I issued a memo making this clear to all members of the Department. I ask that it also be submitted for the record.

Senator INHOFE. Without objection.

[The information referred to follows:]



SECRETARY OF DEFENSE
1000 DEFENSE PENTAGON
WASHINGTON, DC 20301-1000

4/19/2018

MEMORANDUM FOR ALL MEMBERS OF THE DEPARTMENT OF DEFENSE

SUBJECT: Sexual Assault Awareness and Prevention

Those entrusted by our Nation with the lives of our troops and with carrying out violence must demonstrate self and unit discipline in all aspects of our performance. This requires us to do what is right at all times, regardless of the circumstances or whether anyone is watching. We are warfighters, defenders of our Nation, and exemplars of our Nation's values. Unit cohesion is what holds us together under stress and keeps us combat effective when the chips are down. Admired leadership builds the trust of all hands, trust being the coin of the realm and our bedrock in building a cohesive team, one free of denigrating behavior.

In this regard, I am highlighting our Department's commitment to assertively prevent and swiftly and appropriately respond to any sexual assault in our ranks. I expect every member of the Department to use their initiative and courage to model ethical and legal behavior in the workplace, at home, and online. My objective is that we communicate and behave in a way that reflects positively on America's military and builds trust daily in our chain of command, and I am directing a re-doubled effort from our most senior to most junior on insisting on an assault-free military.

Preventing sexual assault is our moral duty. By its nature, sexual assault is one of the most destructive factors in building a mission-focused military. Self-discipline, alert Non-Commissioned Officers (NCOs), and attuned chains of command are essential if we are to set standards that strengthen our military readiness to fight well and increase our ability to recruit and retain the finest all-volunteer force this world has ever known. Leaders in the Department also have a special obligation, an *in loco parentis* responsibility, for our young members that buttresses unit cohesion and combat effectiveness.

Due to the age at which nearly all recruits enter the military, NCOs and officers must carry this special responsibility for the care of our troops. While casualties on the battlefield are understood to be consistent with our military duties, I accept no casualties due to sexual assault within our ranks. Military leaders are to be zealous in carrying out *in loco parentis* responsibilities and ridding our ranks of such illegal, abhorrent behavior.

I know that the overwhelming majority of our military and civilian personnel represent the highest standards of decorum and maturity. However, I expect disciplined behavior from all hands without exception. I charge all officers, NCOs, and supervisors to use their authority and force of personality to prevent and eliminate sexual assault from our ranks.

Jim Mattis

Secretary MATTIS. The 2018 National Defense Strategy's three primary lines of effort, building a more lethal force, strengthening our alliances, and reforming our business practices, will restore our competitive military advantage ensuring we are prepared to fight across the full spectrum of combat both now and in the future.

I want to thank this committee for your strong, spirited bipartisan collaboration. While our trajectory is going in the right direc-

tion, our work has just begun. This is a year of opportunity and a chance to continue to work together building on a strong start as we turn the National Defense Strategy into action.

The points I need to emphasize in this hearing are that this budget, which is designed to execute the defense strategy, is building a more lethal force and it is also building for the future by improving our military technological competitive edge, and we will reform the Department's business processes to establish that culture of performance and affordability to ensure security and solvency. The strategy is the guidepost for all our actions, including this year's strategy-driven budget request, driving meaningful reform to establish an enduring culture of performance, affordability, and agility.

I cannot appear before you without expressing my gratitude to the men and women of our Department. They are the ones who must ultimately turn the National Defense Strategy into action. Every day more than 2 million servicemembers and nearly 1 million civilians do their duty honoring previous generations of veterans and civil servants who have sacrificed for their country. It is a privilege for me to serve alongside them, and I thank them for their tireless efforts and unyielding standards in defense of our Nation.

General Dunford is prepared to discuss the military dimensions of the budget.

[The prepared statement of Secretary Mattis follows:]

PREPARED STATEMENT BY SECRETARY OF DEFENSE JIM MATTIS

Senator Inhofe, Ranking Member Reed, 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. I must note today's absence of Chairman McCain, a longstanding, respected, and revered member of this committee, and one whose influence is deeply felt.

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 dol-

lar 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.

I want to thank this committee for your strong spirit of bipartisan collaboration. We continue to implement the range of reform initiatives directed by the 2017 National Defense Authorization Act. For example, your establishment of Under Secretaries for Research and Engineering and for Acquisition and Sustainment is already paying dividends in current and future readiness. This change—and others called for by Congress in its oversight role—sets the right course and we are aggressively implementing them.

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 fiscal year 2019 base budget requests the resources necessary to fulfill the Department's enduring mission to provide the combat-credible 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 fiscal year 2019 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 fiscal year 2017 Request for Additional Appropriations and fiscal year 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 fiscal year 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.

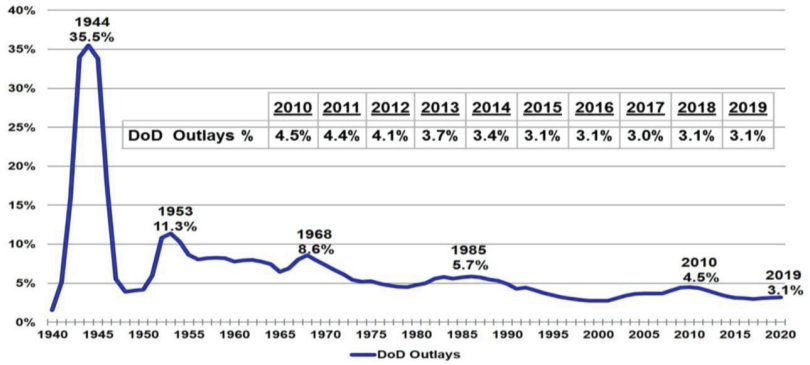


Figure 1. Defense outlays as a percentage of gross domestic product (FY 1940 – FY 2023)

The National Defense Strategy prioritizes major power competition and, in particular, reversing the erosion of United States military advantage in relation to China and Russia. The fiscal year 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 percent 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 United States 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 fiscal year 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 United States 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 United States confidence in Russia as a reliable treaty partner.

The fiscal year 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-re-

leased 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 readi-

ness 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 fiscal year 2019 budget will continue to invest in the military's most important asset—its warfighters—with a *2.6 percent 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 percent 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 percent 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 fiscal year 2017 and fiscal year 2018 funds you provided have strengthened the Department's lethal posture, enabling our industrial base to increase production capacities. The fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 fiscal year 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 United States 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 fiscal year 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.

Here I will note that I have also issued direction about a particular cancer in our ranks—sexual assault. Unit cohesion built on trust and mutual respect is what holds us together under stress and keeps our forces combat effective against daunting odds. This department is committed to assertively preventing and swiftly responding to any sexual assault in our ranks. While battlefield casualties are a reality of war, we will accept no casualties due to sexual assault in our military family. I personally discussed this with all senior department leaders. Earlier this month, I issued a memo making this clear to all members of the Department. I ask that it also be submitted for the record.

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 fiscal year 2016 NDAA and amended by section 863 of the fiscal year 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 Trumps 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 servicemembers killed over a five year period. In the last four weeks alone, 16 servicemembers 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 fiscal year 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 United States 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.

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 fiscal year 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 Servicemembers 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.

Senator INHOFE. Thank you, Mr. Secretary. An excellent statement.

General Dunford?

STATEMENT OF GENERAL JOSEPH F. DUNFORD, JR., USMC, CHAIRMAN OF THE JOINT CHIEFS OF STAFF

General DUNFORD. Senator Inhofe, Ranking Member Reed, distinguished members of the committee, thank you for the opportunity to join Secretary Mattis and Under Secretary Norquist here today. It is an honor to represent your men and women in uniform. And I join the Secretary in acknowledging Senator McCain's leadership and support.

We are here for a candid discussion of the challenges we face. I want to begin by assuring you that the U.S. military has a competitive advantage over any potential adversary today. I am confident we can deter a nuclear attack, defend the Homeland, meet our alliance commitments, and prevail in any conflict. But as we previously discussed, after years of sustained operational commitments, budgetary instability, and advances by our adversaries, our competitive advantage has eroded and our readiness has degraded.

Driven by the National Defense Strategy and building on the fiscal year 2017 and 2018 appropriations, the 2019 budget submission supports rebuilding the lethal and ready joint force that the nation needs. The Secretary has addressed their defense strategy that recognizes Russia and China as the priority while also meeting the immediate challenges posed by rogue regimes and violent extremist

organizations. China and Russia continue to invest across the full range of nuclear, cyber, space, and conventional capabilities. Both states are focused on limiting our ability to project power and undermining the credibility of our alliances. They are also increasingly adept, as Senator Reed has pointed out, at advancing their interests through coercive, competitive activity below the threshold of armed conflict.

North Korea has been on a relentless pursuit of nuclear and missile capability, and they have been clear these capabilities are intended to threaten the United States and our allies in the region.

Iran continues to spread malign influence and create instability across the Middle East.

And while we have made a great deal of progress over the past year, we are still grappling with the challenges of violent extremism, including ISIS, al Qaeda, and associated movements.

Defending our Homeland and our allies and advancing our interests in the context of these and other challenges requires us to maintain a balanced inventory of ready, lethal, and flexible forces that are relevant across the range of military operations.

Fortunately, with your support, we have begun to arrest the erosion of our competitive advantage and we are on a path towards developing the force that we need. This year's budget again builds on the readiness recovery that we started in fiscal year 2017 and accelerates our efforts to develop the capabilities we need for both today and tomorrow.

In requesting your support for this year's budget, I, along with all the senior leaders in the Department, are making a commitment to you that we will make every dollar count. We fully support the auditing initiative led by Secretary Norquist who is with us here today and will maintain an ongoing dialogue with you about the return that you are getting on your investment.

To restore our competitive advantage and ensure our men and women never find themselves in a fair fight, the U.S. military requires sustained, sufficient, and predictable funding. The funding in this budget is sufficient. I look forward to working with Congress to make sure that it is sustained and predictable in the future.

Thank you again for your support and the opportunity to be here today.

[The prepared statement of General Dunford follows:]

PREPARED STATEMENT BY GENERAL JOSEPH F. DUNFORD, JR.

Chairman McCain, Ranking Member Reed, 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 Budget Request builds on the fiscal year 2017 and fiscal year 2018 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 United States 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 United States 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 fiscal year 2017 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.

President's Budget 2018 builds on the readiness recovery started in fiscal year 2017 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 fiscal year 2018 appropriation, we spent the first six months of fiscal year 2018 with fiscal year 2017 funding levels. The flexibility provided in recent legislation will enable the Department to execute the fiscal year 2018 budget responsibly. This includes easing the 80/20 rule (that prevents obligating more than 20 percent 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 fiscal year 2018 funds effectively, we need predictable funding in fiscal year 2019 and beyond to restore our competitive military advantage.

The Department's fiscal year 2019 budget funds ongoing operations, builds on fiscal year 2018 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.

President's Budget 2019 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. President's Budget 2019 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 United States-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 fiscal year 2019 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. President's Budget 2019 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.

President's Budget 2019 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.

President's Budget 2019 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. President's Budget 2019 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.

President's Budget 2019'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. President's Budget 2019 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 fiscal year 2019 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 fiscal year 2018 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 ad-

vances 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 United States 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. Fiscal year 2019 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, President's Budget 2019 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. President's Budget 2019 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, President's Budget 2019 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.

President's Budget 2019 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.

Senator INHOFE. Thank you, General Dunford.

Do you have a statement, Secretary Norquist?

Mr. NORQUIST. I have no prepared statement.

Senator INHOFE. All right. Well, thank you very much.

There are some basic questions that are going to be asked, and I was going to get those out of the way first, one having to do with the INF [Intermediate-Range Nuclear Forces Treaty]. You know, when you get out of Washington and you talk to more normal people back home, the question is China is not a signatory to the INF. Russia is but they violate it. We are and we do not violate it. I would ask you, Secretary Mattis, do you think that currently as it stands, it becomes a unilateral limitation on the United States and our capabilities?

Secretary MATTIS. Senator Inhofe, it could become a unilateral limitation on us. However, at this point, we are trying to bring Russia back into compliance with the INF. That does not address the entirety of your question, of course, being that there are only two countries that have signed this.

Part of the reason we are taking some of the steps outlined in the Nuclear Posture Review are to put Russia in a position to see a benefit to themselves to coming back in compliance. We will have to look more broadly at arms control, and I believe that as we modernize the nuclear deterrent, that will put our diplomats in a good position to initiate those discussions with the other countries that are not signatories.

Senator INHOFE. Now, if Russia does not come back, though, as we are hoping that they will, into compliance, what situation would we be in then?

Secretary MATTIS. Senator, when nations do not live up to treaties, treaties are not sustainable. We would have to deal with that if we are unsuccessful.

Senator INHOFE. That answers the question. I appreciate that.

On end strength, one of the most critical parts of this budget—I am sure that Secretary Norquist would agree with that. As you point out, fiscal year 2018—it is going to be 9,500. Then in 2019, 15,600, and up to 2023, up to 56,000. Now, it is already a problem in recruiting. So I would like to ask either you or the Secretary or General Dunford are you confident we are going to meet these goals because it seems to me like you can only do it through two ways, either retention or recruiting. What are your thoughts about meeting these goals? Pretty ambitious.

Secretary MATTIS. They are ambitious, Senator, especially in light of the improving U.S. economy. It is a totally volunteer force. We even call it a totally recruited force. Our recruiters have to be very assertive in getting out there and selling the military. I would tell you right now that the U.S. Army's retention has allowed them to actually lower their recruiting goal for this year because they are retaining more than they anticipated, which is a good sign. So I am confident, without lowering our quality standards, that we can maintain this modest increase of troops.

I will pass it over to the Chairman for any thoughts he has on that.

General DUNFORD. Senator Inhofe, I was going to highlight that I think the Army is a bellwether for all of us. We just actually had a conversation with the Army this week to talk about their reduction of their recruiting efforts as a result of high retention. But I think at the end of the day what the Secretary said is what we are all focused on and that is making sure that we are recruiting and retaining a high quality force.

My judgment is right now from getting out and visiting the force, as well as discussing it with the chiefs, that today we are recruiting and retaining a high quality force. We do not take that for granted particularly in a competitive economic environment, but I think the size of the force right now can be sustained with quality people.

Senator INHOFE. Do you agree with those numbers from now through fiscal year 2023?

General DUNFORD. I do, Senator, because the focus in the budget this year and last year has been to make sure that the force we have is capable and lethal. And so these numbers that we are increasing really are filling holes to make the units that we have complete.

Senator INHOFE. Now, lastly on the budget, the 2-year budget for fiscal year 2018 and 2019, I have to say it was a lousy budget. And it was a very difficult thing for me to vote for, and the only reason I did is the same reason that we are here meeting about this morning.

So what I would like to have each of you do, primarily you, General Dunford—what would have happened instead of what we did, if we just went the normal CR route and since we are going to have to face this in the future and now is the time to start working for it because we are talking about fiscal year 2020 and beyond—what will happen if we are successful in our goals for fiscal years 2018 and 2019 and we do not have the same opportunities to continue that for fiscal year 2020?

General DUNFORD. Senator, thanks for that question.

One of the things I think we all talk about a lot is our overall competitive advantage. And I think back in 2000, 2001, we could take it for granted that we had a competitive advantage over any potential adversary. That was particularly in our ability to project power anywhere in the world we needed to to advance our interests.

What has happened over time is that competitive advantage has eroded, and if we had not had the budget in 2017, 2018, and 2019 and the projections that we have beyond 2017 and 2018 and 2019, I think what really is at risk overall is our competitive advantage over any potential adversary. I think that adversely affects the relationship we have with allies and partners. It adversely affects the deterrence against our potential adversaries, and clearly it would affect our ability to respond in the event that deterrence fails. I mean, I really there is—in addition to the readiness issues and some of the other important issues that we discuss, the overall strategic impact of sequestration and not getting the budget that we had in 2017 and 2018, I think really is our ability to project power and address all those areas I mentioned, assurance, deterrence, and responsiveness.

Senator INHOFE. So from 2020 on, it would be a crisis if we did not——

General DUNFORD. If we return to the Budget Control Act and sequestration levels, we would not have completed the recovery that we have been on. As you pointed out in the beginning, Senator Inhofe, the challenges that we have right now took us 10 or 15 years to develop. It is going to take us more than 2 or 3 years to recover from those challenges.

Senator INHOFE. I understand that.

You agree, I assume.

Secretary MATTIS. I agree, Senator, 100 percent, and as the ranking member pointed out, we have future capabilities we must develop now if we are going to carry out our responsibilities to those who sit before this committee in the years ahead. So the dangers we can see growing, and I think that we are going to have to main-

tain ourselves at the cutting edge of technology, organization, and combat lethality.

Senator INHOFE. I agree, and I think we need to be starting to talk about that now.

Senator Reed?

Senator REED. Well, thank you very much, Mr. Chairman.

Mr. Secretary, in the wake of the annexation of Crimea and the activity in Ukraine, Congress in the 2015 NDAA prohibited bilateral military cooperation with Russia, which at the time seemed to make perfectly good sense. At this moment, when we are in a very challenging situation in many areas of the world, would it make sense to review those provisions and give you more flexibility and ways in which you could conduct military-to-military dialogue with Russia in certain situations?

Secretary MATTIS. Yes, Senator Reed, it would. And let me be very specific here. There is no national security waiver to what is referred to as the CAATSA [Countering America's Adversaries Through Sanctions Act] act, the specific act that says that if another nation buys military equipment from Russia, then we will not sell them ours. There are nations in the world who are trying to turn away from formerly Russian-sourced weapons and systems like this. We only need to look at India, Vietnam, and some others to recognize that eventually we are going to paralyze ourselves.

And so what we ask for is the Senate and the House pass a national security waiver in the hands of the Secretary of State. I am not asking for myself. Foreign policy is driven from Foggy Bottom. So if he has the waiver authority and I can go to him and show it is in our best interests and we get an internal management of this process, then it keeps us from being boxed in by the Russians.

Senator REED. Well, thank you, Mr. Secretary.

Let me turn my attention now to Iran. At your confirmation hearing, Mr. Secretary, you indicated that when America gives her word, we have to live up to it and work with our allies, which was in my view confirmation of the strategic needs to stay within the confines of JCPOA. What is your position today, Mr. Secretary?

Secretary MATTIS. Senator, I can assure you there has been no decision made on any withdrawal from JCPOA. The discussions are ongoing in the National Security staff and those of us who are charged with that responsibility of giving the President advice, and it is going on today as we speak. There are obviously aspects of the JCPOA, of the agreement, that can be improved upon. We are working with our European allies on it at this time. And again, the decision has not been made whether we can repair it enough to stay in it or if the President is going to decide to withdraw from it.

Senator REED. I appreciate this, Mr. Secretary. The issue of repairing it, though, is unlikely to be fully accomplished by May 12th. Is it your position that if there is an ongoing effort to make such fixes to the agreement that we should stay within the bounds?

Secretary MATTIS. Yes, sir. We would have to look at what degree of fix we anticipate is achievable and then put that alongside America's broader interests and decide if it is worthy or not.

Senator REED. Thank you.

And, Mr. Chairman, General Dunford, you similarly indicated that there would be consequences with withdrawing from JCPOA in many dimensions. One would be our allies would be less likely to cooperate with us countering destabilizing activities in the region. And you seem to indicate a preference for remaining within JCPOA. Is that still your position?

General DUNFORD. Senator Reed, when I look at it through the military dimension, the thing that I have been bringing to the debate is making sure that whatever we do, we have a framework for dealing with all of the elements of the challenges we face from Iran. So it is the nuclear threat. It is the missile threat. It is the cyber threat. It is the maritime threat. And it is the sponsorship of proxies. So at the end of the day, it will be the President's decision as to what the framework is for dealing with all those challenges. My role is to try to highlight those challenges and to make sure that whatever decision is made addresses them as effectively as we can.

Senator REED. Thank you, General.

Mr. Secretary, there has been an unfortunate escalation of the cycle of violence between Israel and Iran and their proxies in Syria beginning in February with the shooting down of an Iranian drone over Israeli airspace, which is appropriate, and then strikes against targets within Syria which seem to be Iranian Hezbollah cooperative endeavors that could pose a danger to Israel.

Is there a significant risk of escalation at this moment that would not only engulf Syria but spread throughout the region?

Secretary MATTIS. A complex question. I believe the short answer is yes, Senator. I can see how it might start. I am not sure when or where. I think that it is very likely in Syria because Iran continues to do its proxy work there through Lebanese Hezbollah there and over into Lebanon. And so I could imagine this sparking something larger.

Senator REED. One other, if I may, just quickly. The Assad regime continues to consolidate its position. One area which is still under the control of rebel forces is the southern border against Jordan. If they move there, which some people indicate they might, would that be another sort of pressure point in terms of not only Jordanian but Israeli counter-reaction?

Secretary MATTIS. Assad's continued presence and his forces' presence in light of what they have done over several years to their own people, and then when you look at them hosting Lebanese Hezbollah, any kind of position like that along the southern border is a direct threat against Jordan, against Israel, and it is something we are going to have to address. We are trying to do that through the diplomatic process, the UN [United Nations] process, which is referred to as the Geneva process, but to date that has not been availing.

Senator REED. Thank you very much.

Senator INHOFE. Thank you, Senator Reed.

Senator Wicker?

Senator WICKER. Mr. Secretary, just a quick follow-up on a question Senator Reed asked. Can you give us any guidance as to when a decision might be made about the JCPOA?

Secretary MATTIS. Yes, Senator. I believe it will be made before the 12th of next month.

Senator WICKER. Thank you.

Mr. Secretary, the Ships Act makes the 355-ship Navy the official policy of the United States of America. This enacts in statute a requirement that came down to us from the admirals and generals, not something that we arrived at here at the congressional level. Do you agree that the 355-ship requirement is now the official policy of the United States?

Secretary MATTIS. I do, Senator.

Senator WICKER. In terms of getting there, the target date was an unacceptable period in the 2050s. Recently a decision was made to extend the lives of some destroyers. That moves it to the 2030s. What do you need from us, and what are the plans in the Pentagon for moving that date even earlier?

Secretary MATTIS. Well, as we try to balance the force, sir, if you gave me all the money in the world, I would go for it in the next 5 years, of course. Right now, we are trying to balance inside the administration. But for right now, we are trying to balance solvency and security because solvency is critical to the long-term national security of our Nation. But at the same time, we are asking for this year 3.1 percent of GDP, and we believe the Nation can afford that and perhaps even increase that. That would depend, of course, on the level of taxation you are willing to put in because we should not be growing the national debt further, but at the same time, what part of that tax base you are going to commit to national defense. I believe we are moving toward a more maritime strategy in terms of our military strategy to defend the country. It is the nature of our time, and so I would be supportive if the Senate found a way to increase the shipbuilding budget.

Senator WICKER. Work with us on ideas about getting there, sir.

Let me just ask you then my final question. The RAND reports concluded actually some very alarming verbiage, that the United States military would have difficulty deterring and defeating a Russian conventional attack in the Baltics. The committee has previously received testimony that United States ground forces are outranged, outgunned, and overmatched. Our own General Scaparrotti, the Commander of United States European Command [EUCOM], has testified that, quote, the ground force permanently assigned to EUCOM is inadequate to meet the combatant command's directed mission to deter Russia from further aggression.

Now, the Chairman of the Joint Chiefs just testified that we still have a competitive advantage over any adversary and that our strategy is designed to keep that strategy from eroding.

So I do not want to scare the American public, and I do not want to alarm our allies. But is General Scaparrotti correct? Is the RAND report correct? Is it a little more alarming than our Chairman of the Joint Chiefs just said about an eroding competitive advantage?

Secretary MATTIS. Senator, I believe that we can all see the growing threat that Russia has chosen to be. It has chosen to be a strategic competitor. NATO opened the door to a partnership of sorts. I still remember Russian marines and United States marines training in Camp Lejeune for UN peacekeeping missions back in

the late 1990s-early 2000s. That is a long distant memory as they have chosen to do what they have done in the Ukraine and Crimea, with cyber against our elections. I can go on, as you know. And you have seen significant expulsion of diplomats, sanctions put on Russia by this administration.

I believe we do have a competitive advantage today. It is important we expand it over the Russians. They have a geographic advantage that my geographic combatant commander is rightly looking at. But looking at it more broadly, as we address this, America is more capable than any nation of expanding the competitive space against something like a ground attack into the Baltics. There are a number of ways, symmetrical and asymmetrical, we can make this a very, very tough problem for the Russians. We do that by, with, and through the NATO alliance, by, with, and through our whole-of-government effort, everything from the Treasury Department to the State Department.

So I think you have to look beyond the geography is my point, Senator Wicker, to get the whole understanding of the situation. I am not dismissing any of General Scaparrotti's concerns, but we have strengths.

Senator WICKER. Thank you, sir.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Wicker.

Senator McCaskill?

Senator MCCASKILL. Thank you, Mr. Chairman.

Sometimes I feel like a broken record on contracting. I am going to try to keep my blood pressure down during my questioning today because today we are issuing a report from the minority staff on the Committee of Homeland Security and Government Affairs looking into another egregious contracting problem at the Pentagon. I would ask that this report, *Fast Cars, Easy Money,* be entered into the record, Mr. Chairman.

Senator INHOFE. Without objection.

Please see Appendix A for information referred.

Senator MCCASKILL. I first would like a commitment from you, General Dunford, that you will read this report in its entirety.

General DUNFORD. I will do that, Senator. And I am familiar with the report and with your engagement and what the Army has done as a result of your engagement.

Senator MCCASKILL. Secretary Mattis, will you read the report, please?

Secretary MATTIS. I have no reservations. I am a voracious reader of these kinds of things.

Senator MCCASKILL. I know you are.

Secretary Norquist?

Mr. NORQUIST. I always enjoy reading audit reports, Senator.

[Laughter.]

Senator MCCASKILL. You and I have that in common. And if the audit reports had been read on a timely basis, we would not have taxpayer money paying for a Bentley, Alpha Romeo, Aston Martin, Porsches for executives of a subcontractor on the legacy contract in Afghanistan. We would not have the CEO [Chief Executive Officer] and the COO's [Chief Operating Officer] wives getting salaries

averaging $190,000 a year with absolutely no evidence of them doing any work.

You would know, if you had read all the audit reports, as my staff has, and asked the questions, that in fact the subcontractor not only directed the Pentagon towards this contract, they got most of the work under the contract, and that there was involvement in the Pentagon in helping steer this contract to the subcontractor. You would know that they figured out a way to find a contracting vehicle that they would not have to compete.

The insulting thing about this is they found a contracting vehicle that was for R&D [research & development], asking for hard science proposals. Hard science proposals. In a 150-page solicitation for hard science proposals, the HUMINT [human intelligence] was mentioned one time, one word, human intelligence. They used that one word to pretzel that proposal into an ongoing mentoring program for Afghan intelligence capabilities in theater. Hundreds and millions of dollars. And audit after audit has said they cannot even find any metrics that they made any progress.

I know there are criminal investigations going on. But the question I have to ask, as I have asked repeatedly in this committee, is what is wrong with the debarment process. This is the whip cream and cherry on top of this incredible scandal. They are still a contractor. They are getting taxpayer money as we speak. Why in the world, when you have audit evidence of this kind of egregious—I do not know at what point it becomes criminal or just gross mismanagement by the Pentagon. I do not know at which point it is criminal activity or not. But I do know this that there is enough evidence in the audit reports, Secretary Norquist and Secretary Mattis and General Dunford, that these people should not be anywhere near one dime of taxpayer money.

So I would like somebody to respond to me why in the world we are still doing business with these crooks.

Secretary MATTIS. Senator, I will not take issue with a single word you said. The contract was awarded in 2012. The SIGAR [Special Inspector General for Afghanistan Reconstruction] report that alerted at least at the secretarial level was released in 2017. There is the ongoing investigation, and because it may result—will likely result in criminal charges, we cannot go into a lot of detail in public because we are not supposed to when something is under an investigation. But there is not a word you just said that I would take issue with.

Senator MCCASKILL. I really appreciate that, Secretary Mattis. There are two things I would ask of you, of all of you, and I would hope that I could get answers on those as quickly as possible, and if it has to be in a setting where we can talk about the criminal investigation, one, is how quickly they can be debarred because there is nothing in the law prohibiting you from debarring them right now. There is nothing in the criminal investigation that requires a wait for debarment. So I want to know how quickly they can be debarred.

And secondly, I want to know a list of everyone who currently works for the United States military who should have hands on this and did not, whether it is a CORs [Contracting Officer's Representative] representative or whether it is somebody at this office

that this bizarre contract came out of. But clearly, somebody over there said, hey, we can use this and we can get you the money.

These guys have burrowed in. They have burrowed in at the Pentagon. I have seen this before, and you guys know what happens. Somebody builds a relationship and before you know it, hundreds of millions of dollars are flying around, and frankly nobody is paying close enough attention. Somebody's head has got to roll on this, and I need a list of people that are going to be held accountable for this happening.

Secretary MATTIS. I just got to be careful saying individually before the investigation is done——

Senator MCCASKILL. I understand.

Secretary MATTIS.—because that could end up——

Senator MCCASKILL. I understand. I have confidence in you, Secretary Mattis, that we will get to the bottom of it.

Secretary MATTIS. I know.

Senator MCCASKILL. But I will tell you I am not going to shut up about this until somebody is held accountable for people driving Bentleys. We are losing soldiers. Families are sacrificing. We are worried about their benefits and their pay. And some jerk is driving a Bentley in the UK [United Kingdom] on taxpayer money. If it does not make everybody upset, then something is wrong with them. So let us get busy on this and figure out whose head needs to roll because if somebody is not held accountable for letting this happen, it is going to keep happening.

Secretary MATTIS. Senator, 100 percent with you on this. You will notice last year when I came up here for confirmation, I talked about business reform. This year, alongside business reform, is accountability. I have learned the lesson since I got there, and that is now right alongside business reform is accountability for every dollar. So we are with you. I wish I had been in the job in 2012 is all I can tell you.

Senator MCCASKILL. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator McCaskill.

Senator Cotton?

Senator COTTON. Thank you, gentlemen, for your appearance here today and for your continued service to our country.

Secretary Mattis, I want to return to a few points you made in your opening statement about the budget picture, about the budget levels and certainty. So this Congress passed a 2-year budget a couple months ago. We passed a spending bill that implemented the first year of that budget. That means we have 1 more year on that 2-year budget to pass.

How important is it to the Department of Defense that the Congress pass a DOD appropriations bill in a timely fashion this summer as opposed to having a continuing resolution as we approach the end of this fiscal year on September 30th?

Secretary MATTIS. Senator Cotton, one of the ways we avoid the situation that Senator McCaskill just brought up is having a methodical approach to reviewing every dollar going out. Obviously, the narrower the window to spend the money, the increased workload during that period. So it is critical, and I think that budget certainty also reverberates into American industry as we try to

rearm the country with the modern capability. They cannot do that in their responsibility to their shareholders unless we give them that predictability.

Senator COTTON. Thank you.

Well, since we have the top line number for fiscal year 2019, I hope that we will have the cooperation to pass a DOD appropriations bill this summer in a timely fashion rather than see the filibusters that have occurred in the past.

Looking out a little bit further, that 2-year budget deal only lasts 2 years. We are now less than 18 months away from fiscal year 2020, in which case the Budget Control Act caps and potential sequestration return. How important is it to the Department of Defense that we act now to eliminate the prospect hanging over your head that the BCA caps and sequestration may return in October of 2019?

Secretary MATTIS. Again, we need that predictability, sir, so that we can actually put a strategy into effect. It was noted in opening comments by the committee if you do not have a budget that reflects the strategy, it does not work.

I like quantifying problems to the degree possible. If this were to go into effect, the first cut would be $85 billion in fiscal year 2020. That means the strategy is not sustainable. The strategy is designed to protect America and our interests. I cannot provide you the same strategy. I would have to go back and rewrite it. There would be reductions in what we are able to do.

Senator COTTON. Thank you.

I want to turn now to a question that Senator Reed raised about the Countering America's Adversaries Through Sanctions Act and the specific point about a national security waiver. As you mentioned, two specific countries, India and Vietnam, that have legacy Russian systems—they might face real challenges going cold turkey, so to speak, under CAATSA. So you are suggesting the national security waiver as a way that this Congress can empower soon to be Secretary Pompeo to address the concerns that you have with those two countries. Is that right?

Secretary MATTIS. That is correct. There are other countries. Indonesia, for example, is in the same situation trying to shift to more of our airplanes, our systems, but they have got to do something to keep their legacy military going.

Senator COTTON. How urgent is it that Congress pass that kind of waiver?

Secretary MATTIS. Sir, every day Russia is in a position basically to checkmate us with what they are doing. It is urgent.

Senator COTTON. Would you recommend that we try to do so in this year's National Defense Authorization Act?

Secretary MATTIS. Absolutely.

Senator COTTON. There are only so many countries in the world, and only so many of those use Russian legacy systems that are defense partners. Should we just have a list of countries that soon to be Secretary Pompeo might want to consider? Is there a certain degree of criteria that we should use instead?

Secretary MATTIS. Sir, I would just put in a reporting requirement that we keep the Congress informed every time we exercise it. I would not make it where we have to come back to Congress

in order to add to it. In the dynamics of today, issues can shift countries very, very quickly, Senator Cotton, as you know, and we want to move when we see the opportunity at the speed of relevance.

Senator COTTON. Thank you.

I want to turn now to the Nuclear Posture Review and an exchange you and I had in a classified setting. There is nothing classified about my question or your answer, though. I simply want to have it on the record here.

The Nuclear Posture Review did not include a foreswearing no first use doctrine, which we have never done in our nuclear history going back to 1945. It also advocates for a new sea-launched cruise missile, which we had as recently as 8 years ago, for a low-yield sea-launched warhead. We have numerous low-yield warheads currently in our inventory.

The bottom line, Secretary Mattis, is there any concept doctrine or capability in the new Nuclear Posture Review that is novel or inconsistent with 73 years of nuclear doctrine and practice for the United States?

Secretary MATTIS. No, sir. It is a continuity of our nuclear deterrent framework that you see, but it is also an adaptation so that that deterrent is fit for anyone who thinks that they have created something that they could then give us the option of either surrender or suicide. We want to make certain the deterrent works against any attempted use of these weapons.

Senator COTTON. Thank you.

Senator INHOFE. Thank you, Senator Cotton.

Senator Shaheen?

Senator SHAHEEN. Thank you, Mr. Chairman.

Thank you, Secretary Mattis, General Dunford, and Secretary Norquist, for being here and for the work that you do every day for this country.

Secretary Mattis, the National Defense Strategy deemphasizes the importance of counterterrorism and counterinsurgency operations. There have been, however, a number of reports lately that have suggested that we are actually expanding our special operations footprint in Africa, a report over the weekend about the drone base that is being built in Niger.

Can you talk about what the long-term mission of our troops in Niger is and how we are going to measure the success in accomplishing this mission? I think it is particularly timely given that the report on the deaths of our four servicemen in Niger is coming out this week.

Secretary MATTIS. While at the same time we are deemphasizing irregular warfare, counterinsurgency is the primary challenge to us as the realities of other nations that are choosing to be strategic competitors raise their game. At the same time, as we pointed out, the paradox of war is the enemy always moves against your weak area. So in terms of counterinsurgency in particular, we are going to do this fight by, with, and through allies because most of the time they know the terrain better. It is an intensely, I would call it, fight among innocent people in many cases. It is a fight where cultural understanding is important. our special forces are ideally

suited for that sort of thing, working with foreign forces, what we call foreign internal defense.

The last administration in Africa began the airfield construction, and you need to understand here that had the French not moved when they did in Mali, if they had waited—as President Hollande put it in those days, if they wait for the international community, Mali is going to fall. So they moved quickly and since that time, the last administration and this administration, by, with, and through our allies, support the French leadership. They have over 4,000 troops there. The number we have there has grown. Many of them are construction troops that are constructing the airfield. They will come out when that construction is done. And we will continue to support the French leadership of the African nations that are fighting Boko Haram, al Qaeda in the Mahgreb, forces like that in what we call the trans-Sahel.

Senator SHAHEEN. And so do you see us continuing to expand the footprint in Africa and sending more troops there?

Secretary MATTIS. I do not see any significant increase. There could be temporary increases as we work with a counterterrorism force in one of the countries that needs to be brought up to a higher level of capability because the enemy is trying to move out of the trans-Sahel into their area. As you know, it is a transnational enemy. So we have to be able to react. But I do not see a significant upgrade. Again, it is by, with, and through allies. That is not something that calls for large numbers of U.S. troops. The French, for example, are providing by far the bulk of the troops in that part of the world.

Senator SHAHEEN. I understand that NATO is not going to rule out invoking article 5 of its charter should one or more member nations find themselves under a serious cyber attack. Can you clarify under what circumstances article 5 might be invoked in the case of a cyber attack?

Secretary MATTIS. It would be a hypothetical, as you understand, Senator. But I think that as we come to grips with cyber, if they get to the point of having a massive attack with cyber, I mean, one that threatens life, that shuts off the power to hospitals and communities in the middle of winter, obviously that would be a significant attack. But it would have to be weighed against all the other things that could be done too. Even then, it does not mean the only response is military. There might be better economic responses to whoever did it. As you know, attribution is always a challenge in these things. So we would have to make sure we are firing on the right target, whether it be with economic sanctions, with military responses, or whatever it took. But to go into the article 5 arena, it would have to be very significant.

Senator SHAHEEN. Thank you.

There have been a number of comments made by the President in the last month or so about withdrawing troops from Syria. If we withdraw our troops from Syria now, will we have finished the fight against ISIS?

Secretary MATTIS. Right now, Senator, we are not withdrawing. You will see a reenergized effort against the middle Euphrates River valley in the days ahead and against the rest of the caliphate, the geographic caliphate. You will see increased operations on

the Iraq side of the border. The French have just reinforced us in Syria with special forces here in the last 2 weeks. This is an ongoing fight right now.

Senator SHAHEEN. So we need to stay there in order to finish the fight against ISIS.

Secretary MATTIS. We are there with the other 70—I think it is 73 nations and international organizations, NATO, Arab League, INTERPOL, plus 70 of the most important nations on earth in terms of capability. We are continuing the fight. We are going to expand it and bring in more regional support is probably the biggest shift we are making right now.

Senator SHAHEEN. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Shaheen.

Senator Sullivan?

Senator SULLIVAN. Thank you, Mr. Chairman.

And, gentlemen, thank you for your exceptional service. I think it gives us a lot of confidence on some of the big challenges we have before us.

In particular, I want to commend you, Mr. Secretary and General Dunford on the National Defense Strategy. As you probably see here from Senator Reed's comments and others, there is a strong bipartisan support for that document. I think that is a really important achievement. So thank you for that.

In particular, the emphasis on allies in the National Security Strategy document is very important, certainly as you mentioned time and time again, Mr. Secretary, one of our most important strategic advantages. We are an ally-rich nation and most of our adversaries or potential adversaries are ally-poor. Are we in Congress doing enough? And is the Trump administration doing enough to deepen our current alliances and expand them, as you so frequently talk about? What more could we do if we are not?

Secretary MATTIS. Right. The most immediate effort is what Senator Cotton brought up here about the CAATSA and getting a national security waiver so that we can embrace new allies or partners when they are ready basically to see the way forward alongside us. That would be a critical enabler.

Are we doing enough? Some journalist, who did not have a very rich nightlife, called and she told me that I used the word "allies" 124 times in the National Defense Strategy.

Senator SULLIVAN. We noticed.

Secretary MATTIS. Yes, sir. It is not subtle. It is not meant to be subtle. We are going to do, whether it be the fighting in Africa, by, with, and through them. I think anything you can do to make it an open door for allies—and I realize sometimes those allies do not share all of our values. But if they are security allies, if they are allied with us on security, and if you look at our record over many years of creating democracies and reinforcing democratic impulses when our troops are engaged—I need only point to South Korea and the very vibrant democracy they are today. Yet, there was at one time a move to keep us away from South Korea, to pull us out of South Korea because it was a dictatorship. I think we have got to be willing to work with imperfect allies while being never reti-

cent about what our values are and what we stand for. And your support in that area would be very helpful, Senator.

Senator SULLIVAN. Thank you.

Let me turn—you have some difficult challenging decisions ahead of you. The whole administration does on the JCPOA, North Korea. Let me just mention a few things to consider, and if you would like to comment on them. You know, Senator Reed mentioned a number of things about America giving her word.

There was a number of us who thought this was such an important document that it should have come to the Senate as a treaty. It did not come that way. And interestingly a bipartisan majority of U.S. Senators actually did not approve of the JCPOA. A bipartisan majority of House members did not approve of the JCPOA. As a matter of fact, it is the first time in U.S. history that an agreement of this magnitude was approved, quote/unquote, by the Congress by a partisan minority of Senators and House members. So I think it is important to caveat the idea of America's credibility when this body—our credibility is not on the line.

Similarly, everybody talks about our allies and how important it is to our allies. But as you know, Mr. Secretary, a lot of our key allies, Israel, Gulf Arab nations, were also not supportive.

And let me mention one other thing that I know you two in particular have some, unfortunately, firsthand experience with. The issue of what degree we can trust the Iranian leadership I think should also be considered. Chairman Dempsey was here 2 years ago I believe and testified. I forgot the exact number, but the sophisticated IEDs [improvised explosive devices] that were supplied to Iraqi Shia militias by the Iranians killed or wounded over 2,000 American troops in Iraq. You gentlemen were witness to this carnage during your military service.

Have senior Iranian leaders ever admitted this? And can we trust a country that does not admit this and was responsible for the deaths of so many of our finest young men and women that they have never admitted?

I know I have thrown a lot of things: allies, credibility, trust. But they are all things that we think are very important to consider and I do not think get the attention they deserve when the JCPOA is being reexamined.

Secretary MATTIS. Well, we all recognize the JCPOA was an imperfect arms control agreement.

Senator SULLIVAN. And was not supported by the Congress.

Secretary MATTIS. Yes, sir. I understand, Senator.

And I think that their use of denial and deception to hide their nuclear weapons program—not their nuclear program, their nuclear weapons program—over many years have them in a position of being suspect. I have read it now three times, all 156 pages or whatever it is, including since I got into this job, I was able to read the short classified protocol. And I will say that it is written almost with an assumption that Iran would try to cheat. So the verification—what is in there is actually pretty robust as far as our intrusive ability to get in, IAEA [International Atomic Energy Agency] to get in, that sort of thing. Whether or not that is sufficient I think is a valid question.

I also recognize that some people point out that this could impact the North Korea negotiations. But I would say in that case, in light of Kim's family and himself breaking every international treaty, every agreement they have ever made, whether it be with the Republic of Korea or with the United States, I am less concerned with that ripple effect right now. I think we need to focus on what is in the best interest of Middle East stability and the threat that Iran poses, as the chairman pointed out, with this nuclear program if it does not get extended and maintain the verification, intrusive verification that we need, but also look at what they are doing with their support for terrorism from Bahrain to Yemen, from Syria to Lebanon and elsewhere, their maritime threat, their cyber threat. We have got to look at all these things, sir, as a whole, but at the same time focus on this imperfect arms control agreement and determine if that is in our best interest.

Senator SULLIVAN. Trust factor?

Secretary MATTIS. I think trust but verify would be an exaggeration. I think it is distrust and verify.

Senator SULLIVAN. Thank you.

Senator INHOFE. Thank you, Senator Gillibrand.

Senator GILLIBRAND. Thank you, Mr. Chairman.

General Dunford, your fellow chiefs have told me that they are not aware of any instances of issues with unit cohesion, morale, and discipline as a result of open transgender service. Have you heard of any such incidents?

General DUNFORD. Senator, thanks. I would not typically hear of individual cases of cohesion or discipline issues.

Maybe just a comment on transgender. For me, the issue with transgender has never been about cohesion or discipline anyway. It was just about any individual, regardless of circumstances, being able to meet the physical and mental qualifications of being worldwide deployable. So if an individual is serving without accommodation, then I do not think I would expect to see discipline or cohesion issues in that unit.

Senator GILLIBRAND. During our last discussion on this topic, you said that you would treat all servicemembers, including transgender servicemembers, with dignity and respect.

The recommendations on transgender service and the accompanying panel report were released as part of the DOJ's [Department of Justice] filing on Friday night. Servicemembers found out in the news that the Department had submitted a report that cast dispersions on their fitness to serve, implied they could harm the lethality of the force, and left their futures in the military up in the air.

Do you think this rollout accords transgender servicemembers with the dignity and respect they deserve?

General DUNFORD. Senator, one thing we have tried to clarify for our men and women that are current serving is that—and I cannot talk about any changes in the policy. But one thing that did not change was the status of the men and women that are currently serving.

Senator GILLIBRAND. That is not the impression the report leaves.

Do you know whether this has created anxiety among these troops? Have you met with any transgender troops given this report?

General DUNFORD. I have not since the report was released, Senator.

Senator GILLIBRAND. I recommend that you do so so you are more informed.

Secretary Mattis, one of the things that struck me about your panel's report was its claim that, quote, unlike past reviews, the panel's analysis was informed by the Department's own data and experience obtained since the Carter policy took effect. That is why I have been asking the chiefs about unit cohesion. In fact, General Milley put it with regard to the Army as precisely zero instances of units with less unit cohesion, morale, and discipline.

I am very concerned about this report because it says that there is, quote, scientific uncertainty surrounding the efficacy of transition-related treatments for gender dysphoria. Yet, the American Medical, Psychological, and Psychiatric Associations have all said the report misrepresents what is the scientific consensus when it comes to gender dysphoria and transition. In fact, despite the report's stated concerns about deployability of transgender servicemembers because of gender dysphoria or associated medical care, a report being issued today by the Palm Center here, which I am going to give to you so you can read in full, says that, quote, out of 994 servicemembers diagnosed with gender dysphoria in 2016 and the first half of 2017, 40 percent deployed in support of Operation Enduring Freedom, Operation Iraqi Freedom, or Operation New Dawn, and only one had an issue during that deployment.

It appears that this report that your Department has issued is not based on the Department's data or science but rather, quote, potential risks that the authors cannot back up. In fact, this seems to me to be the same uninformed and unfounded concerns that led to the opposition of repealing don't ask/don't tell, integrating women into the military, integrating African Americans into the military. I think you need to do a lot more work on this topic to inform yourselves.

What is so different about transgender service that makes you think that though the data and medical science do not justify it, transgender service will harm the readiness and lethality of our force?

Secretary MATTIS. Well, Senator, I regret the way you characterize it. I would remind you that when I came into this job, I said I do not come in with a preordained or agenda to change something. I am in to carry three lines of effort forward. One of them was to create a more lethal military. And I believe that service in the military is a touchstone for patriotic Americans. The military protects all Americans' freedom and liberty to live as they choose, and we are proud of that.

Seventy-one percent of 18 to 24-year-old men and women in this country do not qualify for medical, legal, behavioral, intellectual reasons to enlist as a private in the U.S. Army. Seventy-one percent.

In this case, I was meeting with the Service Chiefs and the Chairman—not the Joint Chiefs, the Service Chiefs—last spring, and they were asking me questions because we were coming up on the advent of the induction of transgender. They wanted to know how they were going to deal with certain issues about basic training, about deployability. I said, did you not get all of this when the policy came out? The Carter policy we call it. They said no. And I said, well, did you have input? They said no, they did not.

So I convened that panel. That panel was made up of combat veterans, the vice chiefs of the services, and the under secretaries. They called together transgender troops. They brought in commanders of transgender troops, and they brought in and listened to civilian and military medical experts who have provided care for transgenders both in the military and outside. And I gave my 44-page advice. I would like to have it entered, Chairman, for the record.

Senator GILLIBRAND. And a list of all experts you consulted, please.

Secretary MATTIS. Pardon?

Senator GILLIBRAND. I would like a list of all the experts, medical experts, that were consulted for that report, please.

Secretary MATTIS. Right now, this is under litigation. I will see what I can provide or when I can provide it. I will do that, Senator.

[The information referred to follows:]

I am unable to provide details regarding the names of individuals who advised or provided information to the Panel of Experts because this matter is subject to ongoing litigation in multiple federal courts in which the government is asserting privileges, lodging objections to requests for information, and relying on existing protective orders to ensure robust deliberation and protect confidential and sensitive information. However, the Department's Report and Recommendations on Military Service by Transgender Persons describes the process and the categories of individuals the Panel consulted (pages 17–18) and provides a thorough explanation of the Department's recommendations (pages 32–43).

But at the same time, basically my responsibility is to give the best advice I can for making a lethal force. And I think that right now the Carter policy is still in effect, and we have the four cases being litigated.

Why these issues like this would not come to the Service Chief level during this was a very, very, I would call it, newsworthy situation. The reason is that under the Carter policy, the reporting is opaque. We cannot report that a problem emanated from a transgender. We cannot under the Carter policy do that. So the question you have asked the Service Chiefs and the Chairman are ones that right now the Carter policy prohibited that very information from coming up because it is private information. And it is specifically called out in his policy statement. So it is impossible for them to have responded to you.

And I would just say that right now we look at medical conditions. If gender dysphoria has anxiety or it has some kind of depression, we do not allow anyone in with that. I would have to make a special category that said you can have these disqualifying factors only if you are transgender, and then we can bring you in. I think you understand why we have not chosen to do that.

Senator INHOFE. Thank you.

Senator Fischer?

Senator FISCHER. Thank you, Mr. Chairman.

Secretary Mattis, in last year's NDAA, Congress required the Department to evaluate whether existing cruise missile systems could be converted into a ground-launched version as part of our response to Russia's violation to the INF Treaty. The Department's response, which was a letter from Under Secretary Lord, was sent to the committee 2 weeks ago. And it states that DOD is in the early stages of identifying the system requirements and is therefore unable to conduct an assessment at this time.

I know the Department is moving forward on a broader effort beyond just a ground-launched cruise missile, but I am concerned about the urgency of our response because, as we both know, we can spend the next 3 years defining requirements and analyzing alternatives and not conduct any actual research and development.

So I would just ask, what is your expected timeline for moving forward on this, and have you set any kind of internal goals to ensure that we do not spend years in this preliminary stage?

Secretary MATTIS. It is a very applicable question. What we are doing right now—as you know, we once had a sea-launched nuclear cruise missile. We took those off after the Berlin Wall and the years afterwards, off the Navy ships. So by going back to a weapon that we had before, there is a fair amount of already sunk technology costs that we will not have to redo, will not have to come back up and ask for again.

I need to get back to you on the specific timeline. But remember what we are trying to do here, Senator, is to put our diplomats in the strongest position to force the Russians back into compliance. I have been personally engaged with a high-ranking Russian on this issue, and I would just tell you that the NATO allies are also increasingly taking this message to Moscow. But we are going forward with this, and I will have to get back to you with a timeline. It is a very good question. I do not have the answer but I will get it.

[The information referred to follows:]

The Department of Defense is developing options for pursuing Intermediate-Range Nuclear Forces (INF) Treaty-compliant research and development (R&D) of conventional, ground-launched, intermediate-range missile systems that would not be compliant with the Treaty if produced or tested. These options will enable the Department to initiate R&D on specific concepts and includes development of a timeline for the capability that will be consistent with the overall USG strategy. The Department is refining the options for leadership consideration in the next several months. After I have a chance to review these proposals, I will get back to you with a more detailed timeline. The Department appreciates Congress's continued support in our efforts to respond to Russia's violation of the INF Treaty in a way that maximizes pressure on Russia to return to full and verifiable compliance with its INF Treaty obligations while placing the United States in a stronger position should Russia ultimately cause the INF Treaty to collapse.

Senator FISCHER. I would really appreciate your sense of urgency because, as we all know, the Russians were in violation 4 years ago on that treaty. And I agree with you and obviously Congress agrees with you as well that a response is necessary. The administration has also stepped forward on that. So thank you.

Also, Russia continues to expand the scope of its malign activities in Syria. It is building up installations. It is aiding the regime. It is expanding its footprint in the country. And recent reports have also suggested that Russian forces are jamming United States un-

manned aerial vehicles. They are conducting electronic warfare operations against the EC–130 aircraft.

Are the Russian forces actively harassing American forces in Syria? And what do you believe is an appropriate response, if you agree that they are?

Secretary MATTIS. I cannot target the responsibility to the Russians right now. As you know, it is a crowded battlefield, and it has also got Iranians there and, of course, the regime forces as well.

But you notice as we go forward with the—we have so far sanctioned 189 individuals in Russia, and we are looking at those who have—we have also, as you know, thrown six of their diplomats out. And economic sanctions are going to be, obviously, looked at for future violations as well. So we have an asymmetric way, an indirect way of going back after them and making them pay.

Right now, in Syria, we have an odd and somewhat open and never interrupted deconfliction communication line that has worked pretty well to make certain we do not run afoul of one another's forces or one another's operations. They are not coordinated. They are deconflicted in either time or space, mostly in space, the river, for example. The Euphrates divides our activities in some cases.

Senator FISCHER. Did you use that deconflicted line and communication with the Russians when it was reported in February that there were large numbers of Russian irregular forces that had attacked United States forces?

Secretary MATTIS. It was used, Senator. The Russian high command in Syria assured us it was not their people, and my direction to the Chairman was the force then was to be annihilated. And it was.

Senator FISCHER. Thank you.

Senator INHOFE. Thank you, Senator Fischer.

Senator Heinrich?

Senator HEINRICH. Thank you, Chairman.

Secretary, in response to Senator McCaskill's contracting concerns, you said that the best way to avoid these kinds of problems was, quote, having a methodical review for every dollar going out. And I could not agree more.

So I want to ask you about a particular RFP [request for proposal] coming up. The Pentagon has announced that it intends to bring all of its computing services under one cloud in a $10 billion single award contract. The Department issued an RFI [request for information] last month which received over 1,000 questions and comments from industry and leading technology experts who, for the most part, believed that the current proposal is deeply misguided. Yet, the Department seems to be rushing ahead to issue an RFP in early May and intends to issue an award as early as September.

What is the rush here, and why is the Pentagon moving forward so quickly despite the concerns of both Congress and technology leaders?

Secretary MATTIS. Senator, the rush right now is that we have too many data banks that the front line commanders cannot swiftly draw information from. So what we have been looking at right now is how do we get faster access for the young folks on the front lines

and displaying the information they need, not all the information in the world. The cloud is what they need. So that is the driving impetus. It is the lethality. It is not a sole source and there is no pre-select.

Senator HEINRICH. But it is a single award.

Secretary MATTIS. It will be for 2 years for about—I want to say——

Senator HEINRICH. It is a single award for a $10 billion contract.

Mr. NORQUIST. The first contract is a single award. It has I think a 2-year base, and then some options. Current technology makes it——

Senator HEINRICH. It is a big plum. That is why it deserves attention. I do not want to quibble with you about sole source, but I think it deserves some oversight. And we included language in the omni that requires you to submit a full justification for executing a single award—not sole source, single award contract—instead of a multi-cloud approach. Are you going to be able to submit that justification as required by law? And will it happen before or after the RFP?

Secretary MATTIS. We always align ourselves with the law, Senator. When is it going to be brought in?

Mr. NORQUIST. Both reports will actually be submitted at the time the first report is due. So there is normally a gap. We are going to get them both in on May 7th, and that will be before the RFP.

Senator HEINRICH. Fantastic.

So to be perfectly clear, there are people speculating that this is tailor-made for a single vendor. And I would just ask you to assure me that those concerns are not justified.

Secretary MATTIS. Sir, our goal is to get the best possible service for the front line. I am aware that some people in industry perhaps believe that this should be an equal opportunity thing where everybody gets a piece of the pie. We have got to go forward in a defensible way where you can go to your constituents and say they did the right thing ethically, as well as legally, in order to carry out the best possible support for our front line troops. If we cannot do that——

Senator HEINRICH. I want to just get the best deal for the best product for the people who actually use it on the front lines.

Secretary MATTIS. Yes.

Senator HEINRICH. I hate to go back to cyber deterrence, but it is an endless topic.

So, General Dunford, Secretary Mattis, we keep hearing from combatant commanders appearing before this committee that we need a cyber doctrine. We hear a common refrain that this requires a whole-of-government approach, which we have heard so many times that now it is starting to sound more like it is someone else's job. Our adversaries do not see any significant consequences at this point for their cyber actions, and we need to demonstrate an effective, credible deterrent.

When are we going to have that national cyber doctrine to address this issue?

Secretary MATTIS. I can tell you we are working on it, sir. Inside the Department of Defense, we have got cyber orders out. We have

got 130 or 133 cyber teams already manned. There is more training going on. We have got to get in place a persistent cyber training environment to bring them to the top of their game. So we are organizing for the defend the Nation effort, which I think is what you are referring to, Senator. You know we are in support of, obviously, the Secretary of Homeland Security.

That said, this is a very challenging effort, and I believe that congressional guidance will be necessary as we weigh life and liberty right out of Constitution and what role do you want the military to play inside the United States in a defense mode. I think this is something that you need to lead us on because this is not our normal operating location. Unless there is, as you know, a forest fire or insurrection, we do not do this stuff. We stay focused overseas.

So I think the more clarity we get from the Congress, the better, and I think we have to work with the executive branch, all of us there, including the Secretary of Treasury, for example, and the Secretary of Energy. It is a very big issue right now. We are going to have to break it down into bite-sized pieces, and from the authorities that start here in the spirit of Congress to guide us, we can go forward on this.

Senator HEINRICH. We need to get started then, Chairman.

Senator INHOFE. Thank you.

Senator Perdue?

Senator PERDUE. Thank you, Mr. Chair.

I would like to echo the Secretary's opening comments about expressing our gratitude to our folks in uniform around the world. The best of the best is out there on the wall.

General Dunford, in your testimony, you now are calling space a contested domain. In your words, potential adversaries view our alliance on this domain as a vulnerability they can exploit, and they are increasingly challenging our competitive advantage in space.

You know, for the last few decades, we have used space as a scientific endeavor where our potential adversaries in the last decade have been using it as a potential military domain, obviously.

China in 2007 conducted an ASAT, anti-satellite missile test, that was successful and threw thousands of pieces of debris into that orbit. In 2016, they put up a so-called space debris clearer that could clear that in supposed terms, but also could potentially wreak havoc on our satellites. Even DNI [Director of National Intelligence] Coats talks about any future conflict that would occur with Russia and China would see this potentially be—the first opening salvo would be an attempt to take out our satellite capabilities.

We now see China with a snuggler satellite capability that is being talked about publicly.

In DNI Coats' words, of particular concern, Russia and China could continue to launch experimental, in parentheses, satellites that conduct sophisticated on-orbit activities, at least some of which are intended to advance counter-space capabilities.

And yet, with our advanced battle management system, it seems to me that over the last several months we have been briefed on the future direction—I am talking about 10 years out in the future plan is that we have a strong dependence on our space capabilities.

In the interim term, can you give us some comfort that the military is moving to protect any dependence we have on this space capability? Then give us a little of your thinking about moving more capability from the air, land, and sea domains to the space domain.

General DUNFORD. Senator, I can. And you raise a good issue. I think it is important to just go back and look at the assumption that we made when we started to leverage space for our command and control, for our intelligence, surveillance, reconnaissance, for our navigation, for the precision weapons we had. We made an assumption that space would be uncontested. And many of the systems that we put into space were not resilient, and so they were not able to survive against the anti-satellite technology and other capabilities that the enemy now has to either jam or destroy our space capabilities.

In the budget this year and really starting last year, we have started to invest in broadly the category we call space resilience, which is a variety of things. It is hardening some of the capabilities we have in space today, making sure that new capabilities have in the requirements documents the right requirements to make sure they are resilient to the challenges we expect in the future, and then also ideas of more satellites, leveraging commercial satellites and so forth and perhaps smaller satellites so that all of our capabilities are not in one single satellite.

With regard to characterization of debris and so forth and command and control, by no means am I suggesting where we need to be. But, frankly, starting back a few years ago under General Hyten, who is now at Strategic Command—he was formerly at Space Command in the United States Air Force—we started an initiative to establish a more effective command and control. A key piece of that command and control in our Joint Space Operations Center is the ability to characterize debris in space and to be able to make adjustments in our operating concepts to accommodate that debris in space.

This is absolutely an area of focus in the Department. I think the budget this year reflects that in 2019. It reflects it in 2018. And for me from a warfighting perspective, we have to solve this problem. We have built a force that is dependent on space.

On the other side, in our exercises, we are also now increasingly making sure that we are able to operate in a space-denied or degraded environment and make sure that we can accommodate degradation to the capabilities that we have today that leverage space.

All of those things are very much on our mind, Senator. I appreciate you raising it because I think in the areas that we are concerned about—we say there is not a war in space. There is a war that involves the capabilities that we have in space.

Senator PERDUE. I am about out of time, but would you quickly just comment on the Israeli-Iran potential cataclysmic confrontation potential that they are seeing there in Syria with Iran. The Persian Empire throughout history had a land bridge when they were at their height all the way to the Mediterranean. It sure looks like everything Iran is doing right now is trying to reestablish that land bridge through Iraq and Syria and Lebanon into the Mediterranean.

But right now, we see a really dangerous crossfire with United States and Russia forces in the area and also now between Israel and Iran. You have talked publicly about this, but give us some indication about the way you are thinking about this right now.

Secretary MATTIS. Senator, very quickly, the Iran regime, the Tehran regime, not the Iranian people, are clearly in strength using their proxies in Syria. We have seen them trying to bring advanced weaponry in through Syria on its way to the Lebanese Hezbollah in southern Lebanon. Israel is not going to wait until those missiles are in the air.

Will it be cataclysmic? I hope not. I hope Iran pulls back.

Senator PERDUE. Is there a nuclear threat in that potential confrontation?

Secretary MATTIS. A nuclear threat?

Senator PERDUE. Yes, sir.

Secretary MATTIS. No, sir, not at this time.

Senator PERDUE. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Perdue.

Senator Warren?

Senator WARREN. Thank you, Mr. Chairman.

For over 3 years, a Saudi Arabia-led coalition has been bombing Yemen to counter Iranian-backed Houthi militia. The United States military has been providing intelligence, mid-air refueling, and munitions to the Saudis. In other words, we have been helping and helping a lot.

Our refueling assistance to the Saudi-led coalition is governed by something called the Acquisition and Cross-servicing Agreement, or ACSA I think. The United States has such an agreement with both Saudi Arabia and the United Arab Emirates [UAE]. The Secretary of Defense is authorized to enter into these agreements with any non-NATO country, and it must notify Congress 30 days before it signs such an agreement.

Secretary Mattis, can you give me a ballpark number for how many acquisition and cross-servicing agreements that the United States has entered into with other countries?

Secretary MATTIS. I will have to take it for the record and I will get back. I think I can get back to you very quickly on that, Senator Warren. This was, as you know, a decision by the previous administration we inherited, reviewed, and endorsed.

[The information referred to follows:]

Currently there are 115 Acquisition and Cross-Servicing Agreements in force.

Senator WARREN. What I am trying to get at, though, is how many of these agreements. You do not even have a ballpark for what the number is?

Secretary MATTIS. I do not, Senator.

Senator WARREN. Okay.

You know, after an ACSA is signed, the Defense Department is required to report to Congress. Or let me ask, is the Defense Department required to report to Congress on a regular basis about the type of defense assistance that is provided or to report on any changes in the ACSA?

Secretary MATTIS. I am going to have to get back to you, Senator. I know we have many times testified about this, as did people sitting in these chairs in the last administration from President Obama's administration. You did characterize it correctly what this one is about, however.

[The information referred to follows:]

The Defense Department is not required to report to Congress on a regular basis about the type of defense assistance that's provided pursuant to an Acquisition and Cross-Servicing Agreement. Any changes to an Acquisition and Cross-Servicing Agreement must be made by formal amendment. Amendments to Acquisition and Cross-Servicing Agreements are reported to Congress in accordance with the Case Act.

Senator WARREN. And I think you will find that there is no regular report required. And last month, I joined a letter with Ranking Member Reed and Senator Blumenthal to the Defense Department asking for details about the acquisition and cross-servicing agreements that we have with Saudi Arabia and the UAE as they continue their bombing campaign in Yemen.

Now, the DOD responded with copies of the congressional notifications for these agreements. One was dated February 1988 and the other July 1992. Those are pretty old notifications, given that we signed defense agreements with Saudi Arabia in 2016 and the UAE in 2006.

Now, I am concerned that these agreements have existed not just with Saudi Arabia and the UAE, but with many other countries and with very little oversight from Congress during the administration of both parties. And I think that needs to change.

There is another question I want to ask about, Secretary Mattis, and that is the National Defense Strategy which says that, quote, long-term strategic competitions with China and Russia are the principal priorities for the Department of Defense. The strategy stresses the need to modernize existing equipment, to invest in advanced capabilities, and to enhance the readiness of joint forces for a high-end fight.

Many analysts have said that a conflict on the Korean Peninsula could bog us down for years, degrading our equipment and potentially resulting in thousands of casualties to our allies and to our own troops.

So my question, Secretary Mattis, is what would be the impact of a long-term conflict on the Korean Peninsula on our ability to prepare for a high-end conflict like those described in the defense strategy.

Secretary MATTIS. As you have seen, Senator, the full court press has been for the last year on a diplomatic initiative that is now bearing fruit. It has taken a long time, and I think it can be fruitful. Obviously, we are hopeful but we are just going to see how it works. Every effort is being made that any resort to war is the last resort, as we——

Senator WARREN. I appreciate that, Secretary Mattis, but the my question is if we get bogged down in a long-term ground conflict in Korea, what I am asking about is what would be the impact on our ability to prepare for a high-end conflict like those that are described in the defense strategy.

Secretary MATTIS. War is such an such an unpredictable phenomenon, Senator. I would not subscribe that we would get bogged down. In other words, it might go a lot faster. Neither you nor I can tell if it is going to take 2 years or 2 months.

Senator WARREN. So I am going to try a third time. If there is a long-term conflict on the Korean Peninsula, what impact would that have on our ability to prepare for a high-end conflict like the kind described in the defense strategy?

Secretary MATTIS. It would be distracting, Senator.

Senator WARREN. More than distracting?

Secretary MATTIS. Well, if you look at what has happened over the irregular fights over the last 15 years, you get a sense of what happens when you are distracted over that time from focusing on the primary threat. But we are not going to do that. The Congress has reorganized the Department, and we now have an Under Secretary who focuses on nothing but research and engineering for the future. So he will continue what he is doing. The Department will continue those efforts. Obviously, this will be a distraction of enormous proportions.

Senator WARREN. You know, I will point out that last week I asked the nominee for Pacific Command, Admiral Philip Davidson, the same question, and he put it differently. He said any long-term conflict has significant financial costs and costs around the globe and people costs within the armed services.

So I am concerned about what would happen if we were in a position with both. But let me——

Secretary MATTIS. So I am, Senator.

Senator WARREN. Good. I am very glad to hear about your commitment to a diplomatic solution with North Korea and that we not get bogged down into a long-term conflict there. Thank you, Mr. Secretary.

Secretary MATTIS. We have been committed the entire administration's time, ma'am.

Senator WARREN. Thank you, Mr. Secretary.

Senator INHOFE. Senator Ernst.

Senator ERNST. Thank you, Mr. Chair.

Gentlemen, thank you very much for your continued service to our country.

Secretary Norquist, thank you and your team very much for sitting down with me not all that long ago to review the DOD audit and your progress there. I am very glad that you enjoy reading those audit reports. So thank you for your work on that.

Mr. NORQUIST. And, Senator, I appreciate your interest in the subject. Thank you.

Senator ERNST. Thank you very much.

General Mattis, the Truman carrier strike group just recently departed from Norfolk, and we wish them well. Recent reports suggest that they may remain in the European theater, which is breaking with tradition, rather than deploying to the Middle East as they have during deployments of the past.

Can you speak about the need to make our military less operationally predictable and how we can posture our joint force to truly make our adversaries counter us in the multi-domain?

Secretary MATTIS. Yes, I can, Senator. Naval forces by their very makeup, very composition are naturally agile forces that can be deployed anywhere. In the past, we have focused on simply maintaining a forward presence. Now, with the National Defense Strategy saying that we are going to focus on large power or great power competition, it means that without breaking the families, without breaking the fleet or the field forces of the Army, the Air Force, whatever, we are going to make certain they are capable of deploying and fighting at a higher level of capability. What that means is the Chairman, under his global integrator role where I have given him the authority with my oversight, civilian oversight, to maneuver forces around in a manner that makes us strategically reliable as an ally to our allies but operationally unpredictable to our adversaries—and this is part of making certain that we get out of acting with our Navy like we are shipping line and get back into acting like a Navy.

Senator ERNST. And I greatly appreciate that. Thank you. I think anything we can do to keep our adversaries off kilter, we need to do that. So thank you.

As well, we have been talking a lot about the National Defense Strategy. And, General Mattis, it does reference, quote, expanding the competitive space. Russia has been very, very successful in competing with the United States below the threshold of actual conflict in what we call the gray zone. They have been very aggressive through their military posturing. They have used political influence. They have done information operation campaigns.

What does expanding the competitive space mean for competitions with Russia?

Secretary MATTIS. We are going to have to be able to compete across all the domains of warfare, and we had two of them on this planet, land and sea, for several thousand years. In the last 100 years, we added the air component, and in the last 10 years now or 5 years, we are really focused in on the cyber domain and the outer space domain. We are going to have to be able to compete there.

But there is more than that. America is still a great beacon of hope to people who want to run their own lives. We support sovereignty and territorial integrity. We do not believe nations should be requiring tribute from other nations using the statement of One Belt, One Road. We do not believe that Russia has a veto authority over the countries along its periphery or has any right to change international borders through the force of arms. And so we are going to have to be able to compete across diplomatic, economic, information, energy lines, and we are engaged in that on a routine basis in the sit room in the White House as we orchestrate and integrate this effort.

Senator ERNST. Very good. Thank you very much. Thanks for the reference to DIME [Diplomatic, information, military, and economic] as well. I think it is really important.

The fiscal year 2018 NDAA included a provision to provide assistance to our partner forces to support U.S. special operations combating irregular warfare threats. Have you identified additional resources or new authorities that will help support those lines of

effort, especially when we are trying to counter malign Russian influence?

Secretary MATTIS. I have not seen where we do not have the authorities we need, whether it be through the NATO support that you are aware of and you fund. We are expanding the special operations forces, mostly niche capabilities. It is not a wholesale everything with respect to forces being expanded.

But let me just ask the Chairman to weigh in on this, Senator.

General DUNFORD. There is, Senator, in the European Defense Initiative a special operations component to training and exercises as well, if you are talking specific to the European theater.

Senator ERNST. Yes, absolutely. Thank you.

Thank you, gentlemen. My time has expired. I appreciate your continued service. Thank you.

Senator INHOFE. Thank you, Senator Ernst.

Senator Peters?

Senator PETERS. Thank you, Mr. Chairman.

And, gentlemen, once again thank you for your testimony here today.

Secretary Mattis, you and I have spoken on many occasions about advanced technologies, particularly artificial intelligence and how those types of technologies will radically change warfare and how we fight wars in the future. And we also know that our near-peer adversaries are working very aggressively on acquiring these as well. It is certainly critical for us to be working on it with a great deal of attention.

So my question to you, though, Secretary Mattis, is that I know the Department is working on establishing a joint artificial intelligence center. Could you talk a little bit about that and give us some detail as to what you are thinking about?

Secretary MATTIS. I can, Senator Peters. Like you say, we have discussed these issues many times, and this is probably one of the leading efforts we have. But we also have these kind of efforts going on on big data, on computing, and hypersonics.

In this case that you are asking about here what we are doing, we are finding a number of efforts in the Department that are funded separately. Some of them are making some good progress. Some have not achieved what I would call outputs yet. The Deputy Secretary, the Chief Management Officer are pulling this together, and we are going to try to get a synergy going so that all the money going into this is purposeful, it is going for objectives. And we are not talking about 3 years from now. We are talking 3 months, 6 months from now, what are we doing to get these processes underway to deliver capability in the near term.

Senator PETERS. Is there something this committee can do to help you in your efforts?

Secretary MATTIS. I need to come back to you once we have got it organized, sir. Believe it or not, it has taken me several months just in order to identify everything we have got going on in this regard. Once we have it aligned, I will be back to you, I am sure, saying what we need. Right now, I think we need to get our act together.

Senator PETERS. I appreciate that. I look forward to working with you as you continue down that road.

The other question that I have relates to the procurement process. Yesterday the Government Accountability Office released its 16th annual assessment of DOD weapon systems acquisitions, which tracks the $1.6 trillion portfolio over 86 weapon systems. The report emphasized a troubling trend, that too many programs are proceeding without, as they call it, key knowledge essential to good acquisition outcomes. In fact, if I look at the summary here, basically the Comptroller General states, as we first observed in 2017, production is the acquisition phase most closely associated with cost growth where a lot of these projects are now moving into. Consequently, DOD's continued willingness to accept knowledge gaps in these newer programs, now over 8 years after the implementation of acquisition reforms, indicates that reforms have not yet taken hold to the extent that Congress intended.

Secretary Mattis, could you respond to that finding? And anyone else on the panel, it would be appreciated.

Secretary MATTIS. I believe the finding is accurate. This is why a year ago, when I came in, I talked about reforming business practices. Today I come back with the same words, and then I add "accountability." We believe this is a problem.

Now, there are specific processes to get at this. One of them is make certain you keep people who are running programs in the program long enough that you really get a result from what they learn from the first year and they are not leaving the second or third year.

The second point is you have to get the requirements right up front, sir. Now, in some of these, I would call it, new technology areas, that can be a challenge. And you understand that when we come back in and say, well, we found something through basic research that we did not know before. But we have got to do better at getting the requirement right up front and then do not have requirement growth midway. Specifically on this, we cannot bring technology in that is not at a mature level. If we do that before we prototype it—and I realize that can create a time lag, but that is where we have seen some of this growth come from.

So as we define the problem, it is people, it is processes, and then there are actual technical reasons that we have got to correct, and that is leadership's responsibility. Thus, we have assigned accountability for each of these programs as a co-equal priority.

Senator PETERS. Thank you, Secretary.

In my remaining time—and it is low—I would just like to ask a brief question about Yemen. All of you know that Yemen remains a humanitarian disaster, disease, famine, unsafe drinking water, violence, killing hundreds of Yemenis every day. I previously asked General Votel about this issue, and he attributed some of the civilian casualties that we see associated with Saudi strikes as related to the competence of the forces that were operating, referring to the Saudis there.

Secretary Mattis, General Dunford, briefly could you comment on that? Has the competence of these forces operating in Yemen increased? And what can we expect in the future?

Secretary MATTIS. Sir, I will let the Chairman hit on a couple things we have actually done to reduce the number of innocents being hit. This is a tragedy. It is a catastrophe humanitarian-wise.

I will tell you that now, as of about 3 weeks ago, we have for the first time I believe a United Nations envoy, a very experienced British diplomat, Michael Griffin. I have met with him. The State Department has met with him. We are going to give him full support as we did his predecessor. For the first time I think we have someone with the force of personality and the experience to help drive this to a close and end it.

There are some specific things we have done to address the innocent casualties.

General DUNFORD. Senator, I think mitigating the risk of civilian casualties with strikes is probably two issues. There is a cultural issue, and then there is a technical issue. And I think we have had a positive impact with the Saudis in both regards by the advising and assisting we have been doing. We are collocated with them in their operation centers to help them develop the techniques and tactics that will allow them to conduct strikes while mitigating civilian casualties. And I also think there has been a positive affect of the relationship that we built with the Saudis over time and the training to affect the changes and the culture that would have them take that into account when conducting military operations. So it is a long plodding process, in many cases with the countries we are working on, addressing those two issues. But I think it is paying dividends over time.

Senator PETERS. Thank you, gentlemen.

Senator INHOFE. Thank you, Senator Peters.

Senator Tillis?

Senator TILLIS. Thank you, Mr. Chairman.

Gentlemen, thank you for being here.

I have got one quick question and it has to do with the budget. The President's Budget calls for a 2.6 percent pay raise, another boost to military spending. One concern that I have, if you see the trajectory for pay over time, we are going to end up seeing some of that money to sustain that added expense probably somewhere I think in the $47 billion range.

How are you going to be able to sustain—how are you going to continue to do what we should do, which is continue to try and keep up with the cost of living and the competition you all mentioned earlier in terms of retaining people with a growing economy and then deal with the erosion of resources that would otherwise go to other priorities within the Department? And General Mattis, or Secretary Mattis, I will start with you.

Secretary MATTIS. Senator Tillis, one difference about the way we look at people in the military, we look at them as an investment not as part of our overhead. We educate them. We train them. We screen them. We screen them again and again and again. The idea is that we have best of breed going up and we are pretty good at promoting the right people and keeping an elite force. Part of this is making certain that the sacrifice of military life that can never be mitigated——

Senator TILLIS. No question.

Secretary MATTIS. This is one way to do it.

Senator TILLIS. But, Mr. Secretary, how do you deal with the erosion? If you continue the trend line, how do you deal with the erosion based on other DOD priorities?

Secretary MATTIS. I believe we have to look at this as America can afford survival, Senator. We are 3.1 percent of GDP. If we can do better on our health care, in other words, reduce personnel costs outside the pay raise, if we can do better in our contracting so we are getting better return on the dollar, we are looking at finding those savings inside the Department and making the argument to you that we get to keep them and apply them to the very direction that you are concerned with and rightly so.

Senator TILLIS. Thank you.

General Dunford, did you have something?

General DUNFORD. Senator, I would just say I think, as you know, that the pay raise this year was benchmarked against a pretty consistent index that we have used over time with the ECI [employment cost index], and while acknowledging the challenges we will face in balancing compensation with the other pieces of the Department, I do believe—we had a discussion about it earlier. I do believe that we are in a very competitive market right now for high quality people, and I do not believe that we are paying our people too much. And so we do have to find efficiencies within the Department in a wide range of ways to get the right balance.

But I would not argue at this point that the personnel account is an anchor on the Department. Getting the right people in is the cornerstone of us being successful.

Senator TILLIS. Well, thank you all. You know, in my capacity as the subcommittee chair on personnel, I am always looking for good ideas to give you more flexibility, find those efficiencies, and then plow them back in to making sure we are paying our men and women.

I may have another question about funding, but I do have something that is a little bit—I tend not to get too specific. I focus on the business issues, but I want to talk about Turkey for a minute and I want to talk about it on two fronts.

One, they are below the NATO guideline as a percentage of GDP. Their participation I think is trending somewhere around 1.5 percent. The target is 2.

Two, I would also like to understand the complications that come from having a NATO partner possibly acquiring a missile defense system from Russia and the implications that that could have for our assets in Russia, our manufacturing facilities for the Joint Strike Fighter, et cetera.

Secretary MATTIS. As you know, Senator Tillis, Turkey is the only NATO ally with an ongoing insurgency inside its own country. We assist them, as all of NATO does. We have got Spanish and Italian antimissile batteries in Turkey to protect them against any Iranian threat. The complexity of the Syria fight has colored everything in that region to include Turkey, which has had an enormous refugee influx, and they have gone through an attempted haphazard coup that cost them innocent people killed.

We are seriously concerned across NATO about the S–400 buy, the Russian system——

Senator TILLIS. Has there ever been another NATO ally that has done something like that?

Secretary MATTIS. Well, to a degree. As you know, the Eastern European countries that were equipped with Russian equipment——

Senator TILLIS. They had a legacy. But I mean, after you have gotten past that——

Secretary MATTIS. I am not aware of any, sir.

Senator TILLIS.—reaching out to a would-be adversary, has that ever happened?

Secretary MATTIS. I am not aware of any.

Senator TILLIS. I know I cannot do your all's job, but are there not other complexities just based on the inherent infrastructure that comes with that system with respect to our own intelligence, safety, and security? Look, I agree. We need to protect Turkey. We need to help them make their Homeland safe. But this seems like to be an outlier unlike any time that has happened since NATO was established. Is that an overstatement?

Secretary MATTIS. I do not believe so, Senator. I think that is accurate, and it is causing a lot of concern.

Senator TILLIS. Thank you.

Senator INHOFE. Thank you, Senator Tillis.

Senator Hirono?

Senator HIRONO. Thank you, Mr. Chairman.

I want to thank all of you gentlemen for your service to our country.

And, Secretary Mattis, thank you very much for your continuing commitment to end what you referred to as a cancer of sexual assault in the military.

I wanted to further ask you, Secretary Mattis. The National Defense Strategy mentions expanding and strengthening alliances in the Indo-Pacific region. The Daniel K. Inouye Asia-Pacific Center for Security Studies is just one of several assets in Hawaii that is tailor-made for this mission and your continued support is very much appreciated.

I would like to applaud you for your efforts in building partnerships and alliances, and it is not lost on me that you have made several trips to the region and hosted several regional leaders in the Pentagon since the National Defense Strategy was released.

So besides our traditional allies in that part of the world, where are the best possibilities for new partnerships in the region, and what attributes do these countries share that make them strategically important to the United States? I also want to ask you about the importance of our compacts with Palau, the Confederated States of Micronesia, and the Marshall Islands.

Secretary MATTIS. Well, Senator, the Pacific is a priority theater, as you and I have discussed since my first days in your office.

Senator HIRONO. Yes.

Secretary MATTIS. There is an ongoing effort to build our military structure in the Pacific, and much of this is by, with, and through our allies. And I would say from down under in Australia all the way up through Japan and Korea, you see this actively underway. We also have to be open to nations such as Indonesia, the fulcrum of the Indo-Pacific region, Vietnam as it comes of age and adapts with many of their students here in our country being educated, as we build new ties for the future.

But probably most importantly, as we look over all at this region, I would look at India, the largest democracy on the planet and one where we probably have a once-in-a-generation opportunity to find more common ground. I think it is there. We just have to find it. We do not have to search hard for it in the sense of creating it. We just have to get an understanding of each other's interests, and I think there is a lot of common ground there.

So the attributes you see are geographic. They are based on a potential military commonality in terms of threat, whether it be, as you have seen in the Sulu Sea area where ISIS has come in in strength and created a problem for Malaysia, Indonesia, but especially so for the Philippines. These are all issues that we have to work together if we want to keep the a Pacific stable commerce zone for all countries to use.

Senator HIRONO. What about the importance of our compacts with the island nations that I mentioned, Palau, Micronesia, and the Marshall Islands?

Secretary MATTIS. I would just tell you, Senator, that we recruit from there as you know. Their young men and women serve in our Armed Forces, and we have got probably, in terms of military relationships, an unusually high degree of trust between the United States and those nations. There is probably a lot more that we will be doing in the future along the lines of the direction we are going right now, and I do not see any inhibition on their side or our side to an even better relationship, partnership.

Senator HIRONO. Some of these compacts will come due, and I assume that we are going to be negotiating with them again and that these compacts are there for national security reasons. Is that correct?

Secretary MATTIS. They are there for that, and I think there is also an affiliation that goes back many decades of friendship that we share with them.

Senator HIRONO. And we have certain continuing responsibilities for our country's use of their lands.

Secretary Mattis, while current events may lead to decreased tensions with North Korea, I applaud DOD's commitment to defending the Homeland from ballistic missiles.

So the DOD budget request includes funding for additional ground based interceptors but also funding for new sensor capability such as the Homeland defense radar in Hawaii. How will these new sensors increase our ability to defend Hawaii and the continental United States?

Secretary MATTIS. Senator, those capabilities will allow us to detect launches from various angles. That means sooner track them and determine if they are a threat or not to the Homeland. The Homeland is Guam, Hawaii—let me be very particular here. Guam, Hawaii, Alaska, and the United States. That means we have more engagement time.

Senator HIRONO. And I think that our ability to accurately detect missiles coming our way is very important. I am sure you are aware that we had a false alarm in Hawaii recently.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Hirono.

Senator Graham?

Senator GRAHAM. Thank you, Mr. Chairman.

Thank you both for advocating for more funding for the military. Without you, we could not have done it. So thank you both.

Let us go to Afghanistan. Then we are going to work our way around to Syria.

I talked to the Afghan Ambassador yesterday. He said that the rules of engagement changing targeting the Taliban as part of the enemy force is really beginning to pay dividends. Do you see that, General Dunford?

General DUNFORD. I do, Senator.

Senator GRAHAM. Secretary Mattis?

Secretary MATTIS. Yes, sir.

Senator GRAHAM. The goal is to punish the Taliban to get them at the table and end this thing through negotiation. Is that correct?

General DUNFORD. The goal is to make sure they view that the only solution is a political solution that they cannot win on the battlefield.

Senator GRAHAM. And we are making sure they are not going to win on the battlefield. I want to compliment you and President Trump for changing those rules of engagement.

Do you believe that a residual force is necessary in Afghanistan for a while to come and it should be conditions-based if we ever leave?

General DUNFORD. I do believe that, and that is consistent with our strategy, Senator Graham.

Senator GRAHAM. Secretary Mattis, is that correct?

Secretary MATTIS. Yes, sir.

Senator GRAHAM. To those Senators that advocate leaving Afghanistan, on September the 10th, 2001, we did not have one soldier in Afghanistan. Did we, Secretary Mattis?

Secretary MATTIS. That is correct, Senator.

Senator GRAHAM. We did not have an embassy. We did not have a diplomat. We did not offer them a dime of aid. We got attacked anyway.

Do you agree with me, leaving them alone does not mean they are going to leave you alone?

Secretary MATTIS. Problems in places like that do not stay there, sir.

Senator GRAHAM. So we cannot build a wall between us and the threats coming from the Mid-East, but we certainly can confront them. And I like your strategy in Afghanistan. I think you got the right size force with the right abilities.

Iraq. What did we learn by leaving too soon, General Dunford?

General DUNFORD. We learned that the Iraqi forces were not capable of providing security inside the country, and that gave the enemy an opportunity to resurge. That is where really ISIS had the space to grow.

Senator GRAHAM. I could not agree with you more.

General Mattis, working with our Iraqi partners and coalition partners, we have done a pretty good job of suppressing ISIS in Iraq. Do you agree with that?

Secretary MATTIS. I do, sir, although the fight goes on, but yes, sir, absolutely.

Senator GRAHAM. Would you support a residual force based on conditions-based withdrawal in Iraq if the Iraqis agreed with it?

Secretary MATTIS. Absolutely, and that force will be augmented right now by a NATO training element that is there so it will not be just the Americans.

Senator GRAHAM. I could not agree with you more. More people need to contribute money. President Trump is right. The Arabs need to pay more and other countries need to contribute more.

But do you agree with the following statement? There is really no substitute for the American military when it comes to a holding force. We have capabilities most people do not.

Secretary MATTIS. That is correct, sir.

Senator GRAHAM. Now, let us go to Syria. The goal is two: to destroy ISIL, the total destruction of ISIS, and to combat the malign influence of Iran. Is that the two goals that you all have been articulating?

Secretary MATTIS. Sir, our forces in Syria right now are there to defeat ISIS. There is a political process underway to end the civil war, but the chemical weapons are a separate and distinct issue.

Senator GRAHAM. We have known each other for a long time. I am with you. I do not know. Is the President's statement about withdrawing from Syria—is that conditions-based withdrawal or is he just going to withdraw because he is tired of being in Syria?

Secretary MATTIS. It is conditions-based. As you know, neither the last administration nor this administration sees itself occupying Syria. What we have to do is keep our diplomats in a position of authority so they can end this through the Geneva process.

Senator GRAHAM. Right. But when it comes to ISIS, the goal is to make sure they are ultimately destroyed. Is that correct?

Secretary MATTIS. Destroyed and also they cannot regenerate. So we have to create local forces that can keep the pressure on any attempt by ISIS to try to regenerate.

Senator GRAHAM. Do you see those local forces being able to accomplish that mission better than the Iraqi army when we left Iraq?

Secretary MATTIS. Sir, we will have to mature those forces. We are engaged in it now. We have training going on by a number of our international partners there on the ground right now, as well as our own forces.

Senator GRAHAM. I only have a few minutes.

Is it fair to say that a holding force right now without us would be a risky proposition for a while to come?

Secretary MATTIS. I am confident that we would probably regret it.

Senator GRAHAM. Turkey. If we leave too soon, Turkey is going to go after the Kurds that helped us destroy ISIS. Are you worried about that? We got to get that situation right before we leave.

Secretary MATTIS. We are working with Turkey to resolve this.

Senator GRAHAM. Is that a concern of yours?

Secretary MATTIS. I do not know if that is Turkey's intent, but we——

Senator GRAHAM. We know what they have done in the past. They have said they hate these guys more than ISIS. They have

actually attacked them. That to me needs to be a condition because nobody else will help you in the future.

As to countering Iran, the military strike I thought was not a big price. I do not think it is going to change the battlefield equation. I do not see how you go to Geneva until the battlefield changes. I do not see a change on the battlefield until there is some credible force opposing Assad. I think we should be part of that. If we are not, we are giving Damascus to the Iranians. If we depart here, I think you need to have some kind of element on the ground in Syria to combat Assad. It is in our interest that we not give Iran to Damascus. The good news is there are millions of Syrians who want Assad to go, for another discussion for another time.

Thank you both.

Senator INHOFE. Thank you, Senator Graham.

Senator King?

Senator KING. Thank you, Mr. Chairman.

Secretary Mattis, it occurs to me we have to make an important decision here within the next hour, which is the confirmation of Mike Pompeo to be Secretary of State. It occurs to me, Secretary Mattis, that you may be a good witness in this decision in the sense that you have worked with him directly on the National Security Council. I suspect you have been in the situation room and the Oval Office. What is your view of his—I think two issues that are of concern—judgment and willingness to tell the President—give the President his best advice based upon his information and not necessarily what the President wants to hear?

Secretary MATTIS. Senator, you are right. I have worked with him for over 14 months. I have worked with him intimately during that time. I would just tell you I have seen a rigorous intellect. His judgment has been mature and objective while still applying subjective elements. It is not just a brittle approach to problem solving. He is never shy about providing his input to include when it was not the direction the discussion was going and he had to stand in opposition to the desires of some of us in the sit room.

Senator KING. Thank you. That is very helpful. I appreciate your providing that.

General Dunford, you were asked about what is going on in Yemen, and you were saying we are making progress and it is a cultural change. There was a report just this morning allegedly 3,500 schools in Yemen have been targeted by Saudi airstrikes. I do not know if that is true. That is an allegation. But I just worry that we are complicit in something that will turn out in the hindsight of history to be a humanitarian tragedy. And I would appreciate it if, for the record, you could supply us with what controls we have, what limitations we have, what we are doing to be sure that that is not the case.

General DUNFORD. Senator, I will. I will supply it for the record.

But what I would say here this morning is we are not at all involved in what we describe as the kill chain. So we are not involved in what targets to strike.

Senator KING. But my concern is that we can say that, but if we are doing intelligence and refueling, we have got our hands on this thing. We have got our fingerprints on it. And we cannot then say, well, we do not know what they are going to do with that fuel we

put in their jets. I do not think that is going to be an acceptable answer if we find out—well, I think we are finding out now that some pretty bad stuff is happening with our engagement. I really hope you will give this some thought and give us some solid——

General DUNFORD. Senator, I fully understand your concerns. We will outline that for you.

Senator KING. Thank you.

To get back to the budget, which is the subject of this hearing, just looking at the numbers, I think it is very important that the public understand that we are talking about the lowest percentage of GDP for the defense budget in something like 70 years, 3.1 percent. I noticed in looking at the absolute numbers, this year's proposal is actually below the appropriation for 2010. So here we are 9 years later. 2010 was 691. You are talking about 686. So I just think it is important to put those figures into context.

And, Mr. Norquist, a question to you. It occurs to me that one of the things that is happening in the defense budget is that we are recapitalizing. We are in a sense paying deferred maintenance in terms of readiness, in terms of upgrading systems like the *Ohio*-class submarine that have not been upgraded in 30 years, the B–21. I would think in your position it would be helpful to us who have to justify this budget to our constituents to break that down a bit to say, okay, what is it that is current operations and what is it that is paying past due bills in effect. Do you agree that that is part of what is happening here?

Mr. NORQUIST. I do. And just to put it in context, if instead of the sequestration back in 2011, Congress had simply capped defense at inflation, did not allow for pay raises and everything else, that is the number you would be at now. The difference is you would not have had several hundred billion dollars of lost buying capacity. You would not have been missing maintenance on equipment. You would not been having older planes that are not getting replaced. So you are not even in the same position. So the fact that it took Congress to raise the ceiling by $85 billion just to get back to where inflation alone would have put the defense budget shows you how deep a hole the Department has been in during that period of sequestration and the disruption to the military's readiness.

Senator KING. It is very important to make that point to the public because sometimes people just look at the number and say this is a huge number. It is more than other countries. Actually we are not the highest country in the world in terms of percentage of GDP. I think we are fourth or fifth. That is really I think the appropriate way to look at it.

Final question and this is a short one because I am already out of time. Secretary Mattis, I presume, based upon your prior testimony that you think it is important to maintain and rebuild our diplomatic capacity at the State Department. That is a part of our national security apparatus. Is it not?

Secretary MATTIS. They are critical to our national security, Senator.

Senator KING. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator King.

Senator Scott?

Senator SCOTT. Thank you, sir.

Good morning to the panel. Thank you for being here and thank you all for your service to this country.

Secretary Mattis, General Dunford, Secretary Norquist, I may be a little biased here but I do not think that I am. I think South Carolina is the epicenter of training and readiness of our military, whether it is Fort Jackson where we train more than half of the enlisted soldiers or Parris Island, Secretary Mattis, where you know we actually make half of the marines, or the Navy nuke school where we prepare our sailors, or Shaw Air Force Base where we have the largest F–16 wing in the Air Force, or if it is going to theater, it is likely going through a C–17 at Charleston Air Force Base, not to mention both SPAWAR [Space & Naval Warfare Systems Command] and the Savannah River site which I think is a forward-leaning, forward-looking part of our military.

So when the National Defense Strategy discusses a return to great power competition with Russia and China, I am very interested in seeing America leverage the ingenuity and the imagination for our Nation to ensure that there is never a so-called level playing field for our adversaries. To ensure American dominance in all areas, we must innovate faster and bring new capabilities like hypersonic weapons, directed energy, and advanced unmanned aircraft to the field sooner.

With additional funding for R&D, how are we working to make sure that we get those new technologies in the hands of our warfighters as soon as conceivably possible? Secretary Mattis, please begin.

Secretary MATTIS. Senator, what we are doing right now is, because the Congress reorganized us, you expressed your displeasure over years with what we would call Acquisition, Technology and Logistics. You broke it in half. Ellen Lord now runs Acquisition and Sustainment. That is the current fighters you see, F–16's there, the current C–17's. That sort of thing is being addressed by Ellen Lord. But you also set up Research and Engineering under Michael Griffin, our Under Secretary, confirmed him. And he has the responsibility for directed energy, for hypersonics, for joint artificial intelligence efforts. So we are organizing now for an expeditious, output-oriented exploration in research of these advanced technologies that we know are going to play a role. As we speed this forward, that is how we get them out in the hands of the troops fast, not by having more studies done but by actually having something developed and fly a hypersonic vehicle by X day. And now everybody works together.

We are also concentrating the Department's efforts that were somewhat diffuse, which is not uncommon with new technology. But now we know what we need to focus on. So we are pulling those together. So the Army, the Navy, the Air Force are working together as service departments in making this a synergistic effort.

Senator SCOTT. Thank you. Certainly looking at the comments of Secretary Griffin in the HASC [House Armed Services Committee] hearing about our inability to even see them coming, it is important for us to expedite that process as quickly as possible.

Did you want to add anything, General?

General DUNFORD. The only thing I would say is one of the other things, Senator—you know, so we have talked a little bit about science and technology research and development. A really key piece too is our exercises in experimentation. One of the key elements of the Secretary's strategy is to make sure that we regenerate our exercise program. It has suffered admittedly as a result of the operational tempo over the last decade. But as we look forward, better joint exercises, a core element of which is joint experimentation, will help move some of those capabilities through the pipeline a bit faster. And so I think there really is three pieces, two of which you spoke about, but that third piece is really critical. Particularly going into this summer, that is an area of particular interest for the Secretary and I.

Senator SCOTT. Thank you.

I want to continue on the subject of keeping the perch that we have.

Secretary, you and several of your predecessors have stated how important it is for us to address our adversaries? theft or acquisition of intellectual property and sensitive defense-related technology. You have officially endorsed the Foreign Investment Risk Review Modernization Act, FIRRMA, which Senator Cornyn and others on this committee, including myself, introduced to modernize the way we screen for an investment for national security risks.

Do you see FIRRMA, while not necessarily a silver bullet, as one crucial step towards addressing the China threat?

Secretary MATTIS. It is critical on China, on a number of other threats that we face. Cyber, for example, is not only from China, but I would also point out that one of the reasons Secretary Mnunchin orchestrated the sanctions against China goes to the very heart of what you were just talking about, the intellectual property theft.

Senator SCOTT. Would you support including FIRRMA as a part of the NDAA?

Secretary MATTIS. I would have no reservations whatsoever about it, Senator. It is a much broader effort than just Department of Defense. So I would not want it to become a military priority effort and not the same priority for others. It has got to be a whole-of-government. For example, Treasury Department, Commerce, Department of Energy, Homeland Security, they all have a role in this.

Senator SCOTT. Yes. I am on the Banking Committee and we are working on it as well on the non-defense side.

Do you believe, as the National Defense Strategy and your previous public comments suggest, that China poses the significant national security threat to the country still?

Secretary MATTIS. Senator, I think the one thing that this administration would be graded on most critically 10 or 15 years from now, historians will look back and say did we develop a relationship with China, a mature relationship, a productive relationship, did we do everything we could as we look at the long-range competition to keep it out of war and into a more productive stance. And at the same time, some of the things that you have initiated are absolutely critical that we take our own side in this competi-

tion. So I think this is critical as you look at, but there is nothing that dictates this has to go to a force of arms between us if we do this right, along the lines I think you are doing right now.

Senator SCOTT. Thank you, sir.

I will just close, Mr. Chairman, with this comment. From my assessment, China's successful acquisition of United States technology is what helps them be a near-peer competitor.

Senator INHOFE. Thank you, Senator Scott.

Senator Kaine?

Senator KAINE. Thank you, Mr. Chair.

And I appreciate the witnesses' testimony. It has been an instructive morning.

I want to do a Senator Kaine broken record topic and talk to you about congressional authorization for military force.

You each appeared before the Defense Subcommittee of Senate Appropriations about a year ago, March 22, 2017. Secretary Mattis, you stated that, quote, I would take no issue with the Congress stepping forward with an AUMF [authorization for the use of military force]. I think it would be a statement of the American people's resolve if you did so. I thought the same thing for the last several years, I might add, and have not understood why the Congress has not come forward with this, at least a debate because I believe ISIS is a clear and present danger we face.

General Dunford, the same day you stated, quote, I agree with the Secretary. I think not only would it be a sign of the American people's resolve but truly I think our men and women would benefit from an authorization for the use of military force that would let them know that the American people in the form of their Congress were fully supportive of what they are doing out there every day as they put their lives in harm's way.

Are your feelings today generally consistent with the testimony you gave in the Senate a year ago on this topic?

Secretary MATTIS. Generally they are, Senator. I will say that we believe right now the operations we are conducting are legal and we have a feedback loop to the Congress to make certain we are not doing anything where you are not kept informed. We would need the right AUMF, and you and I have discussed it. That would be the only caveat I would say. We would not want to end up restricting ourselves.

Senator KAINE. General Dunford?

General DUNFORD. Senator, I feel the same way, and I think what the Secretary said is what I would have said first. You know, what I would be concerned about changes is just making sure that we have the inherent flexibility that we have today to be able to prosecute an enemy that does not respect boundaries in time.

Senator KAINE. Secretary Mattis, you then after the March hearing that I described, sent a letter I think actually to the Senate Majority Leader in September of 2017, and then together with Secretary Tillerson appeared before the Senate Foreign Relations Committee at the end of October 2017. And in that letter and here, you talked about some of the sort of limitations or concerns that you might have that the idea of an authorization, the idea of congressional expression of resolve would be good thing, but that on the operational side, you would have concerns. And you shared in

that letter and in that testimony some of the concerns that you have. I do not need to go through those, but you remember those.

Is that still generally your point that if we could do a congressional authorization, great, but take into account some of the reservations or concerns you expressed?

Secretary MATTIS. Yes, sir. I am still aligned with those comments.

Senator KAINE. I have worked on this matter, and I have proceeded upon an additional assumption that I think is important for Congress, that if we were to do an authorization, it would be very important that the authorization be done in a way that was bipartisan so that we would not be sending a sign either to the American public or especially to our troops that support for military action against non-state terrorist groups, for example, is something that just one party supports and not the other because then that would raise a question of, okay, a good or bad election might then lead to a lack of resolution, which would make people wonder whether they were being supported out on the battlefield.

Do you share that thought that if we can do a resolution, it should not only be one that protects operations but also expresses a bipartisan resolve of Congress?

Secretary MATTIS. I think it is critical that our adversaries and our allies see a unified America when we make the grave decision to put our troops in harm's way, sir.

Senator KAINE. Just as I close, Senator Corker and I have introduced an authorization that is being taken up by the Senate Foreign Relations Committee soon. We have attempted to incorporate into that authorization, Secretary Mattis, some of the concerns you expressed in the letter of September 2017 and the subsequent congressional testimony. It is bipartisan and thus involves compromises. But since the chair of that committee has indicated a desire to take it up and put it through a markup of the committee, I look forward to working together with you and other administration officials so that we can hopefully get this right and express that bipartisan resolve that I think our troops deserve.

Secretary MATTIS. Thank you.

Senator INHOFE. Thank you, Senator Kaine.

Senator Donnelly?

I will remind those remaining that while our timer has malfunctioned, we will remind you.

Senator DONNELLY. Is there a reason you said that right before I spoke, Mr. Chairman?

[Laughter.]

Senator DONNELLY. Thank you very much to the witnesses.

I want to thank you all of you for your implementation of the Sexton Act requirements regarding military suicide. I know how hard you have worked on this. I know the efforts that have been put in and how you have worked hard to reduce that.

As you look ahead, what are the top priorities now for you when you look at this and you try to determine what else can we do to move the ball here? What do you think are some of the things that we can still accomplish?

General DUNFORD. Senator Donnelly, we actually had a brief conversation about that with the House Appropriations Committee

yesterday. And I think one of the more promising things that we have seen is this kind of interdisciplinary model of mental health care. So that has had a big impact. But we do have significant shortages of the right experts in the right places, and it is hard to sometimes attract the right—you know, we have a small population of uniformed experts. Then we rely on some contract support. In certain places where our forces are—and you have certainly seen the same scourge with veterans where getting the right care to the right people is a difficult thing. So leveraging things like telemedicine, finding ways to deliver that multidisciplinary model even in locations that are geographically difficult to attract the right people I think is the key thing.

But in my own personal experience—and I spend a little less time on it now than I have in previous assignments just because of the nature of my assignment—the single biggest change in my judgment has been the change in the culture of the medical profession to that multidisciplinary approach and then combined with the full visibility of what is going on with an individual in the leadership realm or with the chaplain and so forth. So what I used to tell people is if I knew as much about people when they were alive as I found out about them after they die, we would have been able to do something to help fix this. So I think that that multidisciplinary approach is probably the biggest thing in terms of investment, and then making sure that we actually do know as much about our men and women when they are alive as we sometimes find out after they die is probably the biggest thing we need to continue to emphasize. A piece of it is resources but a piece of it is continuing to have the kind of decisive engaged leadership that we have seen be successful.

Senator DONNELLY. Thank you.

Another thing that you have been working with me and with all of us on in Syria is to try and find the young men and women who ISIS killed while they were there. We appreciate all your hard work, and I just want to say one more time if we could continue to keep looking and continue to make that effort, it would mean the world to those families who have young people who are still over there.

Secretary MATTIS. Please assure them, Senator, that we are doing exactly that. We track this. We get reports frequently about leads. There is no stone left unturned as we try to resolve this.

Senator DONNELLY. And as we are looking at Syria, you hear things from here, from over there, from wherever. When we talk about leaving as soon as we have wrapped up ISIS, I have great fears of seeing history repeat itself in some ways that we simply head out, and the second we do, ISIS comes back in. And I know that the Department of Defense, General Dunford, you have all said, look, we are just not walking away, but I want to make sure that we have a plan in place to protect those people in those regions that we have stood with, who we have given our word to, and who have relied on us as partners and have stuck their necks out for us as well.

Secretary MATTIS. Senator, what we are doing right now is we are helping the local places that we have liberated put together their own civilian leadership. Civilian councils we call them. We

are training their police chief, the deputy chief, and a handful of others so when they bring people in, they have got some professional folks there. So if ISIS tries to come back at them, they are taken care of.

Then we are working the political process to make sure they are not left to drift in terms of not having a seat at the table for their future, their longer-term future. That is a diplomatically led effort, but it is one that the State Department, Brett McGurk, former Secretary Tillerson, Acting Secretary Sullivan will have been working on. So there will be no loss of momentum as we go forward.

Senator DONNELLY. Yes. I worry about them looking up one day—the local forces—and seeing the trucks coming back in with ISIS. As they say, we do not want to buy the same real estate twice.

I also want to ask, what does success in Afghanistan look like a year from now?

Secretary MATTIS. Sir, it is probably going to take more than a year is the first point I would make.

Senator DONNELLY. Right. If you are a year out, where do you want to be, and then what does success look like?

Secretary MATTIS. A more capable Afghan force between their military and their police, the violence level going down. As you know, the Taliban have been unable to take over any more district or provincial centers since last August, and as a result, they have turned to high visibility bombings for the very outcome they have achieved, which is getting a lot of news, that sort of thing.

I think too that we are going to see fewer casualties. We dominate the area. In other words, we have got NATO air support for them on the ground now with people from NATO countries calling the support. We have sent over reinforcements.

And lastly, you will see elections ongoing. You will notice that one of the targets of the Taliban is the election campaign. We are going to sustain this effort under President Ghani, get the elections in, and it will be a reminder to everybody in the country that the Taliban know they cannot win through ballots. That is why they turn to bombs. That does not endear them to the population.

Senator DONNELLY. Thank you all.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Donnelly.

Senator Cruz?

Senator CRUZ. Thank you, Mr. Chairman.

Senator INHOFE. Senator Cruz, our timer is not functioning properly. We will let you know.

Senator CRUZ. I will try to take no more than 40 minutes.

[Laughter.]

Senator CRUZ. Gentlemen, good morning. Welcome. Thank you for your service.

Let us start with a topic that is much in the news, which is Iran. Mr. Secretary, in your judgment, what would be the national security implications for the United States if Iran were to acquire nuclear weapons?

Secretary MATTIS. I think the implications for the United States and for every nation in the region—it would be an increased level of danger at a level we have never experienced from this regime.

Senator CRUZ. General Dunford, anything to add on that same question?

General DUNFORD. No. I think the Secretary captured that, Senator. I mean, given the behavior of Iran and how difficult it is to deal with all the other challenges they present, certainly the possession of a nuclear weapon would be of great concern.

Senator CRUZ. Let us shift to another topic. Let us shift to space. General Dunford, you have acknowledged that, quote, unlike previous eras, when space was considered a benign and unchallenged environment, space is now a contested domain. And based on that shared assessment, I introduced language in last year's NDAA, which my colleagues on this committee supported, that officially labeled space as a combat domain, and it called for a policy to develop and field an integrated system of assets to protect our space-based capabilities, to deter or deny attacks in space, and to defend the U.S. Homeland, our allies, and deployed forces.

In your judgment, what is the United States' greatest military comparative advantage in space relative to Russia and China?

General DUNFORD. Senator, I think there is really a few, if you do not mind me listing them. One is obviously we leverage space for our command and control systems. We leverage it for navigation, and that also includes our ability to deliver the precision munitions. The other area that we leverage it for is intelligence, surveillance, and reconnaissance. So, for example, when North Korea was doing testing, just to put a finer point on it, the first indicators we had that there was a missile test came from our space-based assets. So we really do have some—we do leverage space for some of the core capabilities of the Department.

Senator CRUZ. And what are our greatest vulnerabilities in space, and what are we doing and should we be doing to mitigate those vulnerabilities?

General DUNFORD. What we see with China, Russia, and to some degree some other countries, they developed the ability to jam our systems. They developed the ability to laser-blind our systems. They are some of the biggest challenges. Then one that was referred to earlier is we have got a lot of space junk out there that puts at risk our targets, and as that increases, that becomes a greater threat as well. So those would be the three that I would highlight.

Senator CRUZ. Let me shift to a related topic, which is missile defense. In the last decade, near peer competitors like Russia and China have been able to rapidly test and field technologies that have given the edge in hypersonic flight. These hypersonic weapon systems can be launched and flown in methods traditionally associated with ballistic missiles. The combination of speed, trajectory, and maneuverability make these systems increasingly challenging for our missile defense systems to defend against them and ultimately defeat them.

How do you view the dual necessity of, number one, developing new missile defense capabilities to intercept hypersonics earlier in flight and, number two, furthering the development of our own hypersonics?

Secretary MATTIS. Sir, the reorganization of Acquisition, Technology, and Logistics now has someone focused on these areas,

Mike Griffin with a NASA [National Aeronautics & Space Administration], Lincoln Labs background. Hypersonics is the number one priority, both having them for ourselves but also the defense against them. We can go into a classified briefing for you, sir, about where we are going with it. But I would just register that it is our number one priority in the developing technologies.

Senator CRUZ. And obviously, please let this committee know what else we need to be doing to assist in that.

Let me finally focus on—the administration has taken very positive steps to strengthen missile defense in the Korean Peninsula, particularly with the deployment of THAAD [Terminal High-Altitude Air Defense] batteries. Even so, the capability is calibrated for ballistic missiles and is ill-equipped to defend against conventional threats like rockets, artillery, mortars, of which North Korea has stockpiled a staggering level both to hold Seoul hostage and also to target capabilities like THAAD.

In your judgment, what steps should we take to further protect South Korea against North Korean rockets, artillery, or mortars?

General DUNFORD. Senator, I will start with that. Only so much can be done with defensive capabilities. And a key element of dealing with the challenges presented by North Korea is our offensive strike capability as well. And one of the things that we really have started working on over the last 15 months—truth be told, we divert a lot of our intelligence, surveillance, reconnaissance assets away from the peninsula for a long period of time. So if you ask me right now what is the best way to get after that problem, increase our intelligence, surveillance, reconnaissance—we call that find the threat—and then be in a position to conduct strikes against the threat. And our plans, without speaking with specificity today, are very much focused on more concerted strikes against that artillery, rockets, and denying them that capability. So it is really a combination in my view of there is a baseline of defensive capabilities that we need to have in the greater Seoul area in particular but also enhancing better the ability to conduct offensive strikes against those systems.

Senator CRUZ. Terrific. Thank you, gentlemen.

Senator INHOFE. Thank you, Senator Cruz.

Senator Nelson?

Senator NELSON. Mr. Chairman, I will be quick.

When we talk about challenges in space, we got to talk about challenges in cyber. And I would like to take it from a different standpoint. Not only does cyber threat to the country but to what degree is the Department of Defense, our Cyber Command going to be involved in cyber-enabled information operations like the Russians did to us in the 2016 election? Is that something you want to talk to in a different forum?

Secretary MATTIS. It would be best in a different forum, sir.

Senator NELSON. Okay.

Niger. One of those servicemembers was from Florida. They are just about to produce the report, and in fact, the families, as we speak, have been informed. Is there anything that you can tell us, Mr. Secretary, about the report?

Secretary MATTIS. Sir, we have a 200-page summary—I know that sounds like a long summary, but it was a very involved inves-

tigation spanning three continents. The last family will be notified on Monday. Already in your classified vaults, the SASC [Senate Armed Services Committee] has available the 200-page. I can also get the 6,300 pages up. Many of those pages I have read. But I think right now we have found what we believe to be the crux of the problems, not problem but problems, that contributed to this. It was not a delegation of authority problem. So we know immediately how to address those. And we are doing that right now, addressing those problems.

Senator NELSON. Finally—and I will. I will go and I will read that report.

Quickly, you have touched a lot today on Syria, but the truth is that Iran now has a land bridge all the way to Beirut through Iraq, through Syria, on into Lebanon. Is there any additional thing that you want to share, Mr. Secretary, about how we are going to protect our interests in Syria, given that that is a new significant threat?

Secretary MATTIS. Well, the broader strategy, sir, has got to take this into account. And if Iran does not change its behavior—and I have no reason to think that they will under the current regime. The Iranian people are held hostage by this regime's leadership. So long as they continue to fund the level of proxy warfare, whether it be in Yemen or the explosives they send into Saudi Arabia or into Bahrain—and then you are pointing out the crescent, as they try to resupply their proxy in Lebanon and Syria through a land bridge. I would just suggest that Iraq has not yet succumbed to the idea that they need to be a rump state of the Iranian regime, and I believe that we are well advised to continue to support the Iraqi Security Forces and the legitimate government in Baghdad, as one of the ways to avoid this becoming a reality.

I would also say that the Geneva process in resolving the Syria civil war would set the conditions for more interruption of that.

Then, of course, Lebanese Hezbollah has got to be looked at as a separate and distinct problem inside Lebanon.

Senator NELSON. Thank you, Mr. Secretary.

Senator INHOFE. Thank you, Senator Nelson.

The majority and the minority have agreed, in that there are votes taking place right now, that at the conclusion of the remarks and questions by Senator Blumenthal, we will be adjourned.

Senator Blumenthal is recognized.

Senator BLUMENTHAL. Am I recognized?

Senator INHOFE. Yes, you are.

Senator BLUMENTHAL. Thank you.

I will be brief because we do have votes, and I want to, first and foremost, apologize for being absent for a large part of the hearing. A lot has been going on in the Judiciary Committee and other committees. And I will ask one brief question and then perhaps supplement the record with others.

Have you seen any change in North Korea's cyber activities since the diplomatic discussions concerning a meeting between Kim and President Trump?

Secretary MATTIS. We have not seen a change. Now, I did not specifically go in and look at this in the last week or 2, but I get the reports routinely frankly. So I cannot give you a good answer

on that, a straight answer on it, sir, but I can get back to you, sir, and tell you what we find.

[The information referred to follows:]

[Deleted.]

Senator BLUMENTHAL. Because I have the impression over the years that I have been on the Armed Services Committee that their cyber activities have mounted over the years. Obviously, they have attacked us on a number of occasions. So I would be very interested in your response.

As I say, I have other questions that I would like to put to you. In light of the vote and in light of your very long and valuable attendance here and your forthright answers, I am going to spare you any more time. But thank you for your service and thank you for all you do for the country. Thank you.

Secretary MATTIS. Thank you, Senator.

[Whereupon, at 12:18 p.m., the committee was adjourned.]

[Questions for the record with answers supplied follow:]

QUESTIONS SUBMITTED BY SENATOR DEB FISCHER

INF TREATY-COMPLIANT RESEARCH AND DEVELOPMENT

1. Senator FISCHER. Secretary Mattis, the administration's Nuclear Posture Review states: "The United States is commencing INF Treaty-compliant research and development by reviewing military concepts and options for conventional, ground-launched, intermediate-range missile systems." Please provide an update on the status this research, as well as an anticipated timeline and an identification of major milestones associated with this activity.

Secretary MATTIS. The Department of Defense continues to make progress in exploring options for conducting Intermediate-Range Nuclear Forces (INF) Treaty-compliant research and development on a conventional, ground-launched intermediate-range missile system. The Department has evaluated a range of potential solutions, and once a discrete set of the most promising systems is identified, formal development timelines and major milestones will be established.

OPEN SKIES TREATY

2. Senator FISCHER. Secretary Mattis, do you believe continued participation in the Open Skies Treaty is in the best interest of the United States?

Secretary MATTIS. Yes. It is my view that it is in our Nation's best interest to remain a party to the Open Skies Treaty.

3. Senator FISCHER. Secretary Mattis, would you agree that the United States and our allies enjoy benefits from participation?

Secretary MATTIS. Yes. The Open Skies Treaty contributes to greater transparency and stability in the Euro-Atlantic region, which benefits both the United States and our allies and partners.

4. Senator FISCHER. Secretary Mattis, do you believe we would negatively impact relationships and security cooperation with our allies by withdrawing from the treaty?

Secretary MATTIS. U.S. participation in the Open Skies Treaty provides us with an important mechanism for engaging with our allies and partners. The treaty contributes to greater transparency and stability in the Euro-Atlantic region, which benefits both the United States and our allies and partners.

5. Senator FISCHER. Secretary Mattis, do you believe the current OC–135 is limited in its ability to fly the full range of Open Skies missions, and that a new platform would allow us to maximize the benefit of our participation in the treaty?

Secretary MATTIS. Yes. In order to maximize U.S. benefits from the Treaty, the United States needs to recapitalize and modernize its sensors and aircraft. The 1960s-era United States Open Skies aircraft are ill-suited to extreme operating environments in Russia and experience regular, unplanned maintenance issues, often

resulting in mission delays or cancellations. In order to ensure that the United States can exercise its full treaty rights, I directed the Air Force to begin an effort to recapitalize the U.S. Open Skies aircraft.

QUESTIONS SUBMITTED BY SENATOR DAN SULLIVAN

AUTHORIZATION FOR USE OF MILITARY FORCE AND ARTICLE I WAR POWERS

6. Senator SULLIVAN. Secretary Mattis and General Dunford, Article I, Section 8, Clause 11 of the U.S. Constitution grants Congress the power to declare war. Is it your understanding that before entering into a "pre-emptive or preventative ground war" with North Korea on the Korean Peninsula that the President of the United States would have to come to Congress for an Authorization for the Use of Military Force (AUMF)?

Secretary MATTIS. I appreciate the support Congress continues to provide on matters related to North Korea and remain committed to cooperating with Congress going forward.

The President retains the authority to take actions in self-defense in the event of an imminent North Korean attack. That decision will be made based on the threat and immediacy, and informed by intelligence and consultations with our allies and partners.

It is well-established that the President, as Commander in Chief and Chief Executive, responsible for "foreign and military affairs," as well as for national security, has the power to commit U.S. Forces abroad, as well as to take military action, for the purpose of protecting important national interests, even without specific prior authorization from Congress. The administration is currently committed to pursuing a diplomatic solution. Should circumstances change, the administration remains committed to cooperating with Congress.

General DUNFORD. In the event of an attack or imminent threat of attack from North Korea, we have the authorities required to protect United States interests and meet our alliance commitments. In the case of a pre-emptive strike or deliberate campaign on the Korean peninsula, my military advice to the Administration would be to seek the support of Congress.

Our Nation has a greater degree of success in war when the Joint Force has the full-throated support of Congress.

7. Senator SULLIVAN. Secretary Mattis and General Dunford, Article I, Section 10, Clause 3 of the U.S. Constitution states, "No State shall, without the Consent of Congress ... engage in War, unless actually invaded, or in such imminent Danger as will not admit of delay." Article II, Section 2, clause one states, "The President shall be commander in chief of the Army and Navy of the United States, and of the militia of the several states, when called into the actual service of the United States." Additionally, Article II, Section 2, Clause 2, states "He shall have power, by and with the advice and consent of the Senate, to make treaties, provided two thirds of the Senators present concur; and he shall nominate, and by and with the advice and consent of the Senate, shall appoint ambassadors." In the case of North Korea, how broadly or narrowly do you interpret the President's Article II authorities to engage military forces in hostilities and engage in foreign relations? How broadly or narrowly do you interpret Congress' Article I authorities to declare war?

Secretary MATTIS. I appreciate the support Congress continues to provide on matters related to North Korea and remain committed to cooperating with Congress going forward.

The President retains the authority to take actions in self-defense in the event of an imminent North Korean attack. That decision will be made based on the threat and immediacy, and informed by intelligence and consultations with our allies and partners.

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General DUNFORD. Among my responsibilities as Chairman of the Joint Chiefs of Staff is providing military advice to the President, Secretary of Defense, and National Security Council. I, along with all other members of the Joint Force, swore an oath to support and defend the Constitution of the United States.

I am committed to performing these duties, to working with the administration, and providing candid advice to the President, Secretary of Defense, and all members of the National Security Council. As mentioned in the previous response, I would advise the President to seek Congressional support before conducting a preemptive strike or deliberate campaign on the Korean Peninsula.

MISSILE DEFENSE AND DEFEAT—PRIORITIES

8. Senator SULLIVAN. Secretary Mattis and General Dunford, given recent increases in Ballistic Missile Defense and Missile Defeat in the NDAA and the upcoming release of the Missile Defense Review (MDR), what do you see as the next short term steps to solidify the United States against Ballistic Missile Threats from all threats in the near term? What capabilities do we need to invest in this year?

Secretary MATTIS. Today, the Ground-based Midcourse missile defense system (GMD) provides protection for the Nation. In September 2017, DOD requested the reprogramming of more than $400 million to counter the North Korean missile threat. A portion of these funds support the important Homeland defense activities, including initiating work on the procurement of 20 additional ground-based interceptors in Alaska as early as 2023, which will bring the total to 64 fielded interceptors. This reprogramming also funded a service life extension to the Cobra Dane Radar in Alaska and software upgrades to the Sea-Based X–Band Radar, which are both essential elements of our Homeland defense. Last November the President submitted an amendment to the fiscal year 2018 budget request for $4 billion of additional funding for missile defense, which includes construction of a new missile field at Fort Greely, Alaska, and additional procurement funding for the 20 necessary GBIs. The fiscal year 2019 budget request includes $9.9 billion for missile defense—for the Missile Defense Agency and $3 billion for air and missile defense programs in the services. This budget funds a more capable ground-based interceptor with a redesigned kill vehicle, the deployment of new missile tracking and discrimination sensors in Alaska, Hawaii and the Indo-Pacific region, and a new space-based kill assessment capability. These near-term investments will enable us to obtain substantially more performance and efficiency out of the GMD system necessary to meet the evolving threat.

General DUNFORD. Prior to the 2018 National Defense Strategy (NDS), the primary focus of our ballistic missile defense was on rogue nations. However, the 2018 NDS directed reprioritization to major power competition, in particular reversing the erosion of United States military advantage in relation to China and Russia. In this environment, we need to be concerned about ensuring that our ballistic missile defense capability keeps pace with the increasing threats. Our adversaries are developing missile defense countermeasures, hypersonic glide vehicles and a wide range of nuclear-armed missiles that are capable of posing a direct threat to the United States and our allies.

Current priority missile defense upgrades and capability advancements include:

Sensor and discrimination capabilities. Continued development of the Long Range Discrimination Radar (LRDR) in Alaska. 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, and completion of testing and deployment of the SM–3 Block IIA capability.

GBIs. Increase the GBI inventory to 64 by completing 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 (at sea, on land and Standard Missile-3), 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.

Pending release of the Missile Defense Review (MDR), we are reviewing non-materiel options aligned with the National Defense Strategy and specific portfolio investment strategies that best posture the Joint Force to reverse the negative trends against potential adversaries. We are exploring efficiencies gained by fusing non-kinetic, cyber, electromagnetic, and kinetic capabilities to deny, defend, and defeat adversary threats.

Areas for priority technology investment include effective discrimination in the current and future Ballistic Missile Defense Sensor architecture and completion of the Defense against Hypersonic Weapons Threats Analysis of Alternatives in 2018 to inform/guide any future hypersonic defense capability development. 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.

Finally, 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: a global and regional multinational two-year ballistic missile defense series of experiments executed within an integrated air and missile defense context.

SOUTH CHINA SEA

9. Senator SULLIVAN. Secretary Mattis and General Dunford, China continues to engage militarily in the South China Sea, despite United States and international efforts to maintain freedom of navigation. In your professional military opinion what are China's broad strategic objectives in the South China Sea and how does that affect our allies?

Secretary MATTIS. China's assertive activities in the South China Sea are part of a broader strategy to leverage China's growing military power to advance Chinese control over disputed territories and to coerce rival claimants into showing deference to China's claims. China's strategy is to change the status quo through incremental actions that fall below the threshold of conflict. China's assertive and coercive behavior is leading to increased anxiety in the region over China's long-term intentions. The United States is committed to upholding freedom of navigation and overflight, to seeking peaceful resolution of disputes, and to fulfilling our obligations to our allies and partners. We will also support and assist our allies and partners in their efforts to improve maritime security, maritime domain awareness, and interoperability and in boosting their capability and capacity to reduce vulnerability to coercion from China.

General DUNFORD. China's primary objective in the South China Sea is to exercise effective control overs it maritime claims. Although disputed, these claims constitute nearly the entire South China Sea. The infrastructure and assets China constructed and deployed on reclaimed features enhance its presence in the South China Sea and improve the Chinese military's ability to enforce China's maritime claims—claims that conflict in carrying degrees with those of Brunei, Malaysia, the Philippines, Taiwan, and Vietnam.

A persistent Chinese military presence in the South China Sea constitutes a latent threat of coercion against regional powers due to the important shipping lanes traversing the area. For example, United States allies and partners in Northeast Asia rely heavily on the flow of commerce through these shipping lanes, which includes more than 80 percent of their crude oil supplies. China has also used maritime law enforcement and paramilitary means to assert control over resources and economic activities within dispute areas, such as fisheries and energy extraction.

China is using its actions in the South China Sea to normalize its presence and activities, and shape the regional political environment, seeking to bring regional nations' interests into alignment with China's, and discourage confrontation or criticism of China's approach.

10. Senator SULLIVAN. Secretary Mattis and General Dunford, following up on the previous question, in your professional military opinion, beyond continuing to "fly, sail, and operate wherever international law allows," what more should the United States be doing to respond to China's on-going militarization of their features?

Secretary MATTIS. The Department of Defense strongly supports the whole-of-government approach to this crucial region and is working to strengthen the lethality and readiness of U.S. Forces, while also enhancing the military capabilities of key allies and partners in the region. We are also working with allies and partners through DOD programs like the Southeast Asia Maritime Security Initiative to enhance shared capabilities, increase defense investment, improve interoperability, streamline information sharing, and build networks of capable and like-minded partners to address common challenges. The United States will also continue to pursue a constructive, results-oriented relationship with China in which we seek to improve communication and reduce risks. However, we will not accept policies or actions that threaten to undermine the international rules-based order, a system that has benefited everyone in the region, including China.

General DUNFORD. Senator, given the current geopolitical environment and the comprehensive national effort by China to support their militarization of the region, our response must also exercise the coordinated strength of the whole of the United States Government. We continue to work closely within the interagency to ensure

we approach this challenge with such a whole-of-government response, enhanced by our existing military efforts.

STRATEGIC COMPETITION IN THE ARCTIC

11. Senator SULLIVAN. Secretary Mattis, after your confirmation hearing last year, I asked what capabilities are needed to deter Russian aggression and offset strategic competition in the Arctic, which you coined as "key strategic terrain." You responded that it was a complex question and you would need to consult General Dunford, the Service Chiefs and COCOM commanders for an assessment. Fifteen months later, what's your opinion now?

Secretary MATTIS. The National Defense Strategy (NDS) identifies long-term strategic competition with China and Russia as the primary challenge to the United States' national security. To address this challenge, the NDS prioritizes building a Joint Force capable of defending the Homeland as well as deterring and, if necessary, defeating aggression by a major power. The NDS outlines capability investment priorities that, although not unique to the Arctic, will better enable the Joint Force to deter aggression by any major power and defend our national security interests. These priorities include, but are not limited to, the modernization of nuclear forces, missile defense, and command, control, communications, computers, and intelligence, surveillance, and reconnaissance capabilities.

The Department continues to work toward enhancing the Joint Force's ability to operate within the specific challenges associated with the Arctic environment, including domain awareness and long-range communciations. The Commander of U.S. Northern Command, as the Department of Defense Advocate for Arctic Capabilities, exercises responsibility for identifying specific capability needs to support such operations. The Department will continue to address these needs through prudent investments and within existing budgetary processes.

The United States also recognizes that the Arctic is an area of cooperation. The NDS recognizes our alliance and partner network as a key element of the strategy and source of advantage for the United States. As a result, close coordination with our allies and partners in the Arctic is a key element of our approach to this strategic terrain. Through the Arctic Council, all eight Arctic nations cooperate on issues ranging from search and rescue to scientific, environmental, and economic collaboration. This approach will ensure that we best leverage our respective expertise and resources in the region.

12. Senator SULLIVAN. Secretary Mattis, the National Defense Strategy says "America can expand the competitive space, seizing the initiative to challenge our competitors where we possess advantages and they lack strength." Shouldn't this also be taken literally in terms of Russia and the Arctic, especially with the importance they place on the region?

Secretary MATTIS. The National Defense Strategy (NDS) outlines a comprehensive global approach to expanding the competitive space as part of long-term strategic competition with China and Russia. Building a more lethal, resilient, and agile Joint Force able to deter and defeat aggression by any major power is a critical line of effort to this strategic approach.

The NDS also affirms that in expanding the competitive space, the United States will continue to be open to opportunities for engagement with competitors. Implementing the NDS will ensure that the United States is able to approach any engagement from a position of strength and based on national interests. The Department's objective for the Arctic is a secure and stable region where the Homeland is defended and the United States' national interests are safeguarded. In support of a stable Arctic region, the Department will be prepared to respond to contingencies both independently and in cooperation with like-minded nations.

WITHDRAWING TROOPS FROM KOREAN PENINSULA

13. Senator SULLIVAN. Secretary Mattis, in mid-March, the Washington Post obtained an audio recording from a fundraising speech in Missouri wherein President Donald Trump appeared to threaten to withdraw 32,000 United States troops from South Korea if he can't get a better trade deal with Seoul. He also said, "Our allies care about themselves. They don't care about us." What are the strategic risks associated with withdrawing United States troops from the Korean Peninsula? How would our allies and adversaries view such a move?

Secretary MATTIS. The Department of Defense is not considering the withdrawal of United States Forces from the Korean Peninsula. Any changes to United States Force posture or presence would begin with close consultations with our allies in Seoul and Tokyo.

14. Senator SULLIVAN. General Dunford, what are the operational and tactical risks associated with withdrawing troops from the Korean Peninsula?

General DUNFORD. The operational or tactical implications to our operational plans should be addressed in a classified session. Generally, the specific implications would vary based on the type, quantity, and geographic locations a specific unit was redeployed to. However, to reiterate, there are no plans to withdraw United States Forces from the Korean Peninsula. The United States military presence in Korea has brought stability to the peninsula and the broader region for nearly 70 years. They symbolize the military's critical role in securing United States interests in the Indo-Pacific region while honoring our commitments to our partners and allies. We would evaluate any proposed force posture adjustments against the ability to maintain a sustained, positive impact on the security environment and in consultations with our allies, to include the Republic of Korea.

15. Senator SULLIVAN. Secretary Mattis and General Dunford, in your personal opinions, is withdrawing the troops a prudent course of action?

Secretary MATTIS. Our presence on the Korean Peninsula is based on our alliance with the Republic of Korea, forged during the Korean War. The presence of United States Forces in any country is contingent upon the desires of the host government and the interests of the United States, including our treaty commitments. Given the security conditions that exist in the region today, the presence of U.S. Forces is a demonstration of our ironclad commitment to defend our allies.

General DUNFORD. I do not believe withdrawing our forces would be a prudent course of action, and to be clear, we have not been instructed to make any changes to our Force Posture. Our presence on the Korean Peninsula is a result of our strong alliance with the Republic of Korea, forged during the Korean War, and strengthened over the last 68 years. The presence of U.S. Forces in any country is contingent on the desires of the host government, the decisions of President of the United States, and our treaty commitments.

QUESTIONS SUBMITTED BY SENATOR JACK REED

CHANNELS FOR MILITARY DIALOGUE

16. Senator REED. Secretary Mattis and General Dunford, in response to Russia's annexation of Crimea and aggression against Eastern Ukraine, the National Defense Authorization Act from fiscal year 2015 prohibited bilateral military-to-military cooperation with Russia, with certain specified exceptions. That prohibition remains in place today. As Russia continues its aggression towards us, our allies, and partners, the risk of conflict resulting from miscommunication or misunderstandings remains high and the margin for error is low. Do you believe expanded engagement with Russia through military-to-military dialogues at multiple levels would be beneficial for reducing the risk of conflict as a result of misunderstanding and miscalculation?

Secretary MATTIS. The Department of Defense continues to maintain open lines of communication at multiple levels with the Russian Federation on issues central to reducing the risks of misunderstanding and miscalculation. This includes communication on topics including operational deconfliction, strategic stability, and our existing arms control obligations.

The Office of General Council closely reviews these engagements and at no point to date did they constitute military cooperation in the sense prohibited by section 1232 of the Fiscal Year 2017 NDAA or section 1231 of the Fiscal Year 2018 NDAA.

Currently, we do not assess that expanded engagement with Russia through military-to-military dialogue would have any effect on reducing the risk of conflict as a result of misunderstanding or miscalculation.

General DUNFORD. I believe the current channels of engagement between the United States and Russia militaries are sufficient to minimize the risk of conflict. Our current military engagements with Russia are focused on de-confliction in Syria, strategic stability, and operational safety. The close proximity of our forces and Russian forces in Syria requires the lines of communication remain open to minimize the chance of accidents or miscalculations. The three meetings between General Gerasimov and myself have further enhanced de-confliction priorities between the United States and Russian militaries.

17. Senator REED. Secretary Mattis and General Dunford, are there examples of such talks that you believe would be helpful?

Secretary MATTIS. No. It is our assessment that existing channels of military-to-military communication can continue satisfactorily under the current legislation and that no further legislative intervention is needed to facilitate additional talks.

General DUNFORD. As this point, we need to restart Strategic Stability Talks with Russia. This venue permits us to address a broad range of strategic issues of mutual concern. The last set of talks were in September 2017 in Helsinki, Finland. However, we continue to await a timeframe acceptable to Russia for our next set of talks. This is a critical channel, co-chaired by Under Secretary of State Thompson and the Russian Deputy Foreign Minister, which allows both sides to articulate strategic concerns and propose measures for mitigating the risk of strategic miscalculation.

AUTHORITIES OF THE USD–RESEARCH & ENGINEERING

18. Senator REED. Secretary Mattis, given the need to move expeditiously in the development and deployment of technologies to support the National Defense Strategy, and the common difficulties of coordinating and focusing the efforts of disparate Services and Agencies, do you feel that the USD(R&E) has sufficient authority to direct activities and resources so as to optimize efforts in critical technology areas?

Secretary MATTIS. I am confident the Office of the Under Secretary of Defense for Research and Engineering (OUSD(R&E)) is moving forward to make modernization priorities a reality, and I am certain the OUSD(R&E) is utilizing all of the tools and authorities given by Congress through the reorganization. However, the Department welcomes any additional authority or distinction necessary to realize Congressional intent with regards to the execution of modernization priorities and the roles and responsibilities of the OUSD(R&E).

19. Senator REED. Secretary Mattis, what specific authorities will the USD(R&E) have to direct activities to ensure that our efforts to accelerate technological innovation and maintain or enhance our battlefield technological superiority?

Secretary MATTIS. The Under Seceretary of Defense for Research and Engineering (USD(R&E)) will have many authorities to accelerate innovation and ultimately improve lethality. While the complete authorities of USD(R&E) are outlined in an excerpt from a July 13, 2018 memo from Deputy Secretary Shanahan, authorities of note include: Establishing policies on, and supervising, all defense research and engineering, technology development, technology transition, prototyping, experimentation, and development testing activities and programs, including the allocation of resources and unifying these efforts across the Department; Before any decision to grant Milestone A approval or Milestone B approval, any decision to enter into low-rate initial production or full-rate production for Major Defense Acquisition Program-1 D programs, or at any other time considered appropriate or requested by the Secretary, provide independent technical risk assessments and advise the Secretary on the progress toward meeting key performance parameters, technology maturation, reliability growth projections, interoperability, and cyber security posture of including the maturity of critical technologies and manufacturing processes that have not been successfully demonstrated in a relevant environment; When requested by the Secretary of Defense, Deputy Secretary of Defense, or the Milestone Decision Authority, provide independent assessments of a major defense acquisition program confirming that it incorporates program planning that anticipates the evolution of capabilities to meet the changing threats, technology insertion, and interoperability and be fielded when needed, prior to the obligation of funds for technology development, systems development, or production; When requested by the Secretary of Defense, Deputy Secretary of Defense, or the Milestone Decision Authority, provide independent sufficiency assessments of and advise the Defense Acquisition Board Chairperson on major defense acquisition programs prior to Milestone B and C decisions with respect to the sufficiency of developmental test plans, schedules, resources, risks, and readiness for operational testing and production, including the use of automated data analytics or modeling and simulation tools and methodologies.

TRANSPARENT BUDGETING FOR SERVICE CONTRACTS

20. Senator REED. Secretary Mattis, I am concerned that DOD is not providing sufficient transparency for its current and FYDP budget request for spending on service contracts. This is in contrast to information provided on either civilian personnel or military personnel budgets.

Secretary Mattis, will you provide equivalent information on service contractor spending, so as to promote accountability, auditability, and transparency?

Secretary MATTIS. I share your concern and the Department is working a number of individual reform initiatives that will contribute to addressing improved accountability, auditability, and transparency in services budget and contracting. The Department is developing implementation strategies to address your concern, which are mirrored in both GAO Report 16–119, "DOD Service Acquisition: Improved Use of Available Data Needed to Better Manage and Forecast Service Contract Requirements," dated February 18, 2016, and section 851 of the NDAA for fiscal year 2018, Improvement of Planning for Acquisition of Services.

As part of the Department's Business Reform, the Deputy Secretary appointed a Reform Team for Services Contracting. The Reform Team, who in conjunction with the major stakeholders (Under Secretaries of Defense for Acquisition and Sustainment, Comptroller, Personnel and Readiness, the Chief Management Officer, and the Director of Cost Assessment and Program Evaluation), is co-developing improved processes supporting transparent services contracts budgeting. Initiatives include:

- Developing and implementing more transparent and traceable tracking methodologies for individual contracted services requirements throughout the programming and budgeting process. This transparency is envisioned to provide more insight into the Total Force management by detailing budgets for contracted services at (or near) the same level of detail the Department tracks its personnel (military and civilian) billets.
- Developing and implementing a requirements prioritization process, supported by data. Currently, requirements are validated within organizations or budget lines at the lowest level, within individual stove-piped functions and rolled up into the Operations and Maintenance appropriation. This roll-up prevents Department-level assessment and prioritization of contracted services in support of mission areas, for example, asking whether one organization's need for one kind of service is more important than the same, or a different organization purchasing different types of services.
- Improving contracted Services Requirements Review Boards (SRRBs) in both scope, timing and traceability. The SRRB validations must take place early enough in advance of the programming and budgeting process to provide early input supporting trade-off and prioritization decisions.

The Department has not yet completed implementation of these initiatives and will continue to press implementation of services contracting reform that will, in part, lead to the desired budget transparency that will support accountability, auditability, and improved trade-off decisions.

ROLE OF CIVILIAN WORKFORCE

21. Senator REED. Secretary Mattis, what role do you envision that the civilian workforce will have in your attempts to execute the National Defense Strategy?

Secretary MATTIS. As stated in the National Defense Strategy, a modern, agile, information-advantaged Department requires a motivated, diverse and highly skilled civilian workforce that is sufficiently sized and appropriately resourced. Department of Defense civilians are an essential enabler of our mission capabilities and operational readiness. The Department must undertake a sustained effort to build an appropriate, cost-informed civilian workforce that best serves mission requirements. We must also free up uniformed personnel for military essential needs, and conserve scarce resources for recapitalization, modernization and readiness.

22. Senator REED. Secretary Mattis, in what specific areas will civilian personnel play the leading role in your efforts?

Secretary MATTIS. Department of Defense (DOD) civilian employees are an essential part of our National Defense Strategy. The Department's civilians perform critical functions in intelligence, equipment maintenance, medical care, family support, base operating services and other activities that directly support readiness. The Department's civilian workforce brings to bear capabilities, expertise and skills that directly impact DOD's operational warfighting capabilities. DOD civilians build and maintain weapon systems at depots and shipyards; staff child care centers and schools around the world; keep our airfields, ranges, and armories open; and form the backbone of installation family programs and support. Our civilian workforce provides institutional stability and continuity, and enables the warfighter to focus on military essential needs—a critical component to restoring readiness and lethality.

MANAGEMENT HQ REDUCTIONS

23. Senator REED. Secretary Mattis, what has been the impacts of Congressionally-mandated management headquarters reduction on your ability to implement management reforms and execute the National Defense Strategy?

Secretary MATTIS. While the Major Headquarters Activities reductions limit the manpower that can be made available to support simultaneous reform efforts, the Department will continue to work to achieve reform within the mandated reduction requirements.

24. Senator REED. Secretary Mattis, what is the impact of these reductions on the morale of the workforce and the able to retain the expertise that you need?

Secretary MATTIS. In reducing the size and expenditures of headquarters in accordance with statutorily mandated reductions, the Department has leveraged the full suite of personnel and force management authorities at its disposal—while ensuring mission accomplishment and preserving talent and competency. While any organizational reduction can impact the morale of the civilian workforce, our employees recognize the value their work to the execution of the National Defense Strategy, and they continue to put in the extra effort required to get the job done.

25. Senator REED. Secretary Mattis, what has been the specific impact on the following organizations' ability to execute their designated missions: Office of the Director of Cost Analysis and Program Evaluation and Office of the Director of Operational Test and Evaluation.

Secretary MATTIS. Director of Operational Test and Evaluation (DOT&E): In accordance with the mandated Major Headquarters Activities (MHA) reductions, DOT&E conducted a 35 percent cumulative reduction in civilian personnel which were fundamental to performing its assigned mission. Pursuing MHA cuts would detract from DOT&E's ability to maintain pace with a rapidly changing Department and address an expanding workload.

Office of the Director of Cost Assessment and Program Evaluation (CAPE): The MHA reductions limit CAPE's ability to reconstitute operational warfighting models, conduct independent cost estimates, detailed programmatic analyses, and strategic trade-offs necessary to fully support the Department. Cost estimating workload has increased while associated staff has decreased; as a result, CAPE is relying more upon its new authority to approve Service Cost Estimates rather than conducting its own Independent Cost Estimates. Although CAPE received resources in fiscal year 2017 to support the Department's need to refocus efforts on warfighting models, CAPE is facing limited ability for additional workload including congressionally-mandated studies, enterprise data initiatives such as the Cost Assessment Database Enterprise, and other economic analyses on labor and contract economics.

QUESTIONS SUBMITTED BY SENATOR KIRSTEN GILLIBRAND

TRANSGENDER SERVICE

26. Senator GILLIBRAND. Secretary Mattis, you stated that "under the Carter policy" permitting transgender service, "we cannot report that a problem [related to unit cohesion, morale, or discipline] emanated from a transgender" service member. What is the regulatory language that prohibits commanders from reporting problems related to unit cohesion, morale, or discipline that arise from implementation of the Carter policy? Are the Service Central Coordination Cells created by DOD Instruction 1330.28 designed to receive reports from commanders and provide "expert advice and assistance to commanders with regard to service by transgender service members"?

Secretary MATTIS. While the Department has allowed for service members to change their gender marker since July 2016, the Department did not establish—then or thereafter—specific reporting requirements relating to military members who have initiated gender transition plans. The Department does not track transgender Service members as an individual group or category for the purpose of determining their impact on unit cohesion, morale, and discipline. As noted at footnote 143 on page 37 of the Department's Report and Recommendations on Military Service by Transgender Persons, this decision was taken in consideration of the privacy interests of the individuals involved. Specifically, Department of Defense Instruction 1300.28, "In-Service Transition for Transgender Service Members," paragraph 2.2.f, directs the Military Departments to "[e]nsure the protection of personally identifiable information (PII) and personal privacy considerations in the implementation of this issuance and Military Department and Service regulations." See

also paragraph 3.6 ("[I]n cases in which there is a need to collect, use, maintain, or disseminate PII in furtherance of this issuance . . . the Military Departments and the USCG will protect against unwarranted invasions of personal privacy and the unauthorized disclosure of such PII."). Due to these limitations, the Panel of Experts, as the Department's Report notes at page 18, instead met directly with some commanders of transgender service members who provided their input on the issues associated with accommodating gender transition treatments for gender dysphoria.

The Service Central Coordination Cells created by Department of Defense Instruction 1330.28 are designed to provide expert advice and assistance to commanders with regard to service by transgender Service members. They are not the forum for receiving reports or complaints regarding unit cohesion, morale, or discipline.

27. Senator GILLIBRAND. Secretary Mattis, you stated that, in order to permit accession by transgender applicants under the Carter policy, you "would have to make a special category that says you can have these disqualifying factors [of anxiety or depression], only if you're transgender and then we can bring you in." You stated "we don't allow anyone in with that [anxiety or depression]." Is it correct that current, inclusive policy requires that an applicant with a history of gender dysphoria "has been stable without clinically significant distress or impairment in social, occupational, or other important areas of functioning for 18 months," meaning that qualified transgender applicants do not have anxiety or depression?

Secretary MATTIS. DTM–16–005, "Military Service of Transgender Service Members," dated June 30, 2016 and signed by then-Secretary Carter, established interim guidance for the retention, accession, separation, in-service transition and medical coverage for transgender persons. As required by existing court orders, this guidance was extended indefinitely in a memorandum issued by Deputy Secretary of Defense Patrick Shanahan on December 8, 2017, entitled "Medical Standards for Appointment, Enlistment, or Induction of Transgender Applicants into the Military Services." Under DTM–16–005, "a history of gender dysphoria is disqualifying, unless, as certified by a licensed medical provider, the applicant has been stable without clinically significant distress or impairment in social, occupational, or other important areas of functioning for 18 months." This means that the applicant has not manifested any clinically significant symptoms of anxiety, depression, or distress over the 18 months prior to his or her application for accession. By contrast, a person with a history of depressive disorder or anxiety disorder must demonstrate stability for 36 continuous months.

28. Senator GILLIBRAND. Secretary Mattis, is it correct that DOD Instruction 6130.03 states that applicants, transgender or not, with a history of anxiety or depression are qualified if they can demonstrate the requisite period of stability, meaning that the military does in fact allow enlistment by applicants with a history of anxiety or depression?

Secretary MATTIS. The most recent version of Department of Defense Instruction 6130.03, "Medical Standards for Appointment, Enlistment, or Induction into the Military Services," dated March 30, 2018, lists disqualifying medical conditions. As explained on page 20 of the Department's Report and Recommendations on Military Service by Transgender Persons, the vast majority of mental health conditions and disorders, including bipolar disorder, personality disorder, obsessive-compulsive disorder and body dysmorphic disorder are automatically disqualifying, absent a waiver. However, for a select few mental health conditions, such as anxiety and depression, persons may be accessed without a waiver if they can demonstrate stability for 36 continuous months immediately prior to their application date. Anxiety and depression fall under section 5.28, "Learning, Psychiatric, and Behavioral Disorders," which provides as follows: Depressive disorder is disqualifying if: (1) Outpatient care including counseling required for longer than 12 cumulative months; (2) Symptoms or treatment within the last 36 months; (3) The applicant required any inpatient treatment in a hospital or residential facility; (4) Any recurrence; or (5) Any suicidality (in accordance with Paragraph 5.28.m.). History of anxiety disorders is disqualifying if: (1) Outpatient care including counseling was required for longer than 12 cumulative months. (2) Symptomatic or treatment within the last 36 months. (3) The applicant required any inpatient treatment in a hospital or residential facility. (4) Any recurrence. (5) Any suicidality (in accordance with Paragraph 5.28.m.). Applicants with a history of a single episode of anxiety or depression requiring treatment and who have been free of symptoms for the 36 months prior to their application may be eligible for accession into military service. Any recurrence of anxiety or depression renders an applicant ineligible for accession unless a waiver is granted. Under the current court-ordered transgender policy, by contrast, persons

with a history of gender dysphoria are eligible for accession or enlistment with only 18 months of stability.

29. Senator GILLIBRAND. Secretary Mattis, can you please provide me with a list of all health experts inside and outside government who participated in or contributed to the panel on transgender service and its final report?

Secretary MATTIS. Given this matter is subject to ongoing litigation in multiple federal courts in which the government is asserting privileges, lodging objections to requests for information, and relying on existing protective orders to ensure robust deliberation and protect confidential and sensitive information, I am unable to provide details regarding the names of individuals who advised or provided information to the Panel of Experts. However, the Department's Report and Recommendations on Military Service by Transgender Persons describes the process and the categories of individuals the Panel consulted (pages 17–18) and provides a thorough explanation of the Department's recommendations (pages 32–43).

QUESTIONS SUBMITTED BY SENATOR RICHARD BLUMENTHAL

CYBER

30. Senator BLUMENTHAL. Secretary Mattis, in February, Senators Nelson, Shaheen, and I sent a letter to you urging you to order CYBERCOM to prepare to engage Russian cyber operators and disrupt their activities as they conduct clandestine influence operations against our upcoming elections. Last month, we heard from CYBERCOM Commander ADM Rogers that he has not been given such authority. The new CYBERCOM Commander, GEN Nakasone, was just confirmed by the Senate this week. During his nomination hearing before this committee he acknowledged a need for a more aggressive posture toward Russia. Would you agree that Russia has not been deterred by our actions thus far? Would you agree that Russia will continue to seek to meddle in our elections?

Secretary MATTIS. [Deleted.]

31. Senator BLUMENTHAL. Secretary Mattis, CYBERCOM's National Mission Teams' mission is to defend the Nation from cyberattacks of significant consequence. Since we heard from ADM Rogers, have you authorized CYBERCOM to engage Russian cyber operators and allow CYBERCOM to disrupt their activities as they conduct clandestine operations? How can we best use CYBERCOM to counter Russia's disinformation campaigns for our elections?

Secretary MATTIS. We are working closely with our interagency counterparts to develop and support implementation of whole-of-government strategies to counter Russia's sophisticated disinformation campaigns. The Department of Defense is only one part of the national strategy to counter Russia's sophisticated disinformation campaign, which employs a diverse set of cyber and non-cyber capabilities. The Department's mission is to preempt, defeat, or deter adversary cyber threats before they can impact the Homeland. In this context, the Department's cyber forces operate to counter Russia's malicious cyber activities aimed at the United States.

32. Senator BLUMENTHAL. Secretary Mattis, do you believe DOD requires additional authorities or authorizations to engage Russian disinformation operations?

Secretary MATTIS. The Department is employing its current authorities to address a wide range of issues associated with Russian malign influence and continues to assess the need for any additional authorizations that may be necessary to counter this threat.

AFGHANISTAN

33. Senator BLUMENTHAL. Secretary Mattis and General Dunford, last year, the President announced a "new" strategy for South Asia which deepened United States involvement in Afghanistan. This plan also de-emphasized nation building, while focusing on a tougher stance on Pakistan's terrorist safe harbors. In response, President Ghani committed to a new Compact for reform initiatives across the Afghan Government to take a more central role in improving the country. The effectiveness of these new initiatives and our revised strategy is unclear and violence continues to sow instability. Military commanders, such as Generals Votel and Nicholson, have testified that the United States is in a stalemate in Afghanistan. What are our objectives in Afghanistan? Do you believe we are achieving those objectives? What impact has the Administration's strategy had in Afghanistan?

Secretary MATTIS. The main objective of the strategy announced by the President in August is to prevent attacks against the United States Homeland, our citizens, and our allies and partners from being planned and carried out from Afghanistan. The strategy's conditions-based approach removed timelines for withdrawal and added the appropriate resources and authorities necessary to conduct both the train, advise, and assist mission and the mission to counter terrorist threats.

The additional assets, authorities, and resources required to support the strategy in Afghanistan arrived earlier this year, and the results will not become clear until after the fighting season. Initial feedback on initiatives such as tactical-level advising of Afghan National Defense and Security Forces by the Security Force Assistance Brigade have been positive. Additionally, the strategy appears to have helped on the diplomatic front as evidenced by the Eid ceasefire. Again, I believe that we will have better indicators of the strategy's effectiveness at the end of the fighting season.

General DUNFORD. The South Asia strategy's core for Afghanistan is to help set conditions for a political settlement between the Government of Afghanistan and the Taliban, in order to bring about a sustainable end to the conflict and prevent Afghanistan from re-emerging as platform for terrorist attacks against the United States Homeland, our citizens, and our allies. The United States Government conditions-based approach is led by our diplomatic efforts to build international consensus for an Afghan-led peace process and supported by our military efforts to train Afghan security forces and maintain pressure on elements of the Taliban that choose not to reconcile.

We are less than one year into implementation of the new strategy and will need additional time to evaluate the effectiveness of our new approach. We are encouraged by early indicators, the most significant of which was the first nationwide ceasefire in 17 years over the June Eid holiday. The international community, including leaders from Muslim-majority countries and religious councils, have issued strong appeals for a peace process. We will continue to monitor these and other developments.

34. Senator BLUMENTHAL. Secretary Mattis and General Dunford, according to a Reuters article this week, DOD estimates that 56 percent of Afghanistan is under government control. Would you agree with this estimate? Do you believe the Afghan Government is capable of attaining its goal of securing 80 percent of its population under government control by 2020?

Secretary MATTIS. The Afghan National Defense and Security Forces (ANDSF) remain committed to securing the majority of the Afghan population and denying the Taliban its strategic and operational objectives. Population control alone will not be sufficient to bring peace and stability to Afghanistan. The key to success remains sustained military pressure against the Taliban in order to convince them that they cannot achieve their objectives through violence and continuation of the conflict. The targeted investment of U.S. assets and personnel has increased the lethality of the ANDSF this fighting season. Properly utilized, the ANDSF can apply the military pressure required to open the door for peace talks in the future.

General DUNFORD. The June 2018 Report "Enhancing Security and Stability in Afghanistan Report" stated that, as of May 2018, the Resolute Support headquarters assessed that the Afghan Government maintained control or influence over approximately 65 percent of the population, while insurgents had control or influence over approximately 12 percent of the population, with the remainder contested. The Afghan Government retains control of Kabul, major population centers, most key transit routes, provincial capitals, and a majority of district centers. The increase of U.S. advisors working below the corps and zone levels, are better enabling the ANDSF to sustain offensive pressure on the insurgency and secure the population. It is important to remember that this is a conditions-based, not time-based strategy, and the ultimate goal is a reconciliation process between the Taliban and the government of Afghanistan.

35. Senator BLUMENTHAL. Secretary Mattis and General Dunford, the President cut off aid to Pakistan to push it to stop harboring terrorists. How has this impacted operations with Pakistan? Do you believe withholding security assistance has prompted Pakistan to cease providing sanctuary and support to militant groups that harm United States interests? What more must be done?

Secretary MATTIS. The suspension of security assistance froze financial assistance to all three branches of Pakistan's military, except for a very limited number of programs that directly support United States national security interests. The United States and Pakistan still share common security objectives, and although Pakistan has taken initial constructive steps against externally focused militant and terrorist

organizations, it has not yet taken the decisive or sustained actions that have been requested. The United States is prepared to use the full range of tools at its disposal to encourage Pakistan to cease policies that threaten United States interests and regional stability.

General DUNFORD. The United States Government suspended security assistance to Pakistan due to Pakistan's lack of effective actions in response to our requests to take action against terrorist and militant safe havens. We continue to engage Pakistan on our request and are working with our interagency and international partners to convince Pakistan that their interests are best served by a stable and secure South Asia, free of terrorism.

SYRIA AND IRAN

36. Senator BLUMENTHAL. Secretary Mattis and General Dunford, as the conflict in Syria continues to grow more complex, I remain deeply concerned about the possibility of further instances that risk sparking more serious confrontations between Israel and Iran. How are you working to address malign Iranian activity on Israel's border?

Secretary MATTIS. Our military efforts in Syria are focused on annihilating ISIS, but we remain concerned about Iran's destabilizing activity in Syria and attendant threats to Israel. We are working with allies and partners to expose Iran's malign activity, and as always, are working with Israel to ensure that it has the means to defend itself from Iranian threats.

General DUNFORD. Our military efforts in Syria focus on annihilating ISIS, but we remain highly concerned about Iran's destabilizing activity in Syria, particularly efforts to use Syria to foment attacks on Israel. We are working with allies and partners in the region to expose Iran's malign activity, and as always, are working with Israel to ensure that it has the means to defend itself from Iranian threats.

37. Senator BLUMENTHAL. Secretary Mattis and General Dunford, I am concerned that Iran is entrenching itself in Syria—establishing its proxy militias along the Israel-Syria border and creating a land bridge from Tehran to Beirut through Syria and Iraq. What more should we do to address Iran's expansion? How can we confront the prospect of a long-term Iranian military presence in Syria?

Secretary MATTIS. We share your concern about Iranian presence in Syria. We are working with Israel and other regional partners to ensure they have the ability to mitigate this threat. The United States is seeking support from partners and allies to exert diplomatic and economic pressure on Iran to encourage Iran to end its destabilizing activity, including its activity in Syria.

General DUNFORD. We share your concern about Iran entrenching itself in Syria. We are working with Israel to ensure it has the ability to mitigate any threat Iran may pose from Syria, and are working to address the larger issue of Iranian military presence in Syria through the diplomatic channels, and more broadly, the interagency process.

38. Senator BLUMENTHAL. Secretary Mattis and General Dunford, reporting this week highlighted a series of cargo flights from Iran to Syria—following the April 13 United States and allies' strikes—that potentially carried weapons for use by Assad and his allies that could threaten Israel. What can be done to prevent this from continuing? How can we best counter it?

Secretary MATTIS. Iranian proliferation of weapons is a major issue that is destabilizing the Middle East. We see this not only in Syria, but also across the region in places like Yemen. We support efforts to expose Iran's proliferation of weapons in violation of UN Security Council Resolutions through our Iranian Materiel Display. We are also ensuring that Israel has the means to defend itself from Iran or its proxies.

General DUNFORD. Iranian proliferation of weapons is a major issue that is destabilizing the Middle East. We see this not only in Syria, but also in Yemen and Afghanistan. We are exposing Iran's proliferation of weapons in violation of UN Security Council Resolutions through our Iranian Material Display. We are also ensuring that Israel has the means to defend itself should Iran or its proxies attack Israel.

RUSSIAN SUBMARINES

39. Senator BLUMENTHAL. Secretary Mattis and General Dunford, Russia's resurgence is a carefully calculated revision of their Cold War playbook—similar tactics complemented by technological advancements. The GIUK gap is Russia's gateway to the Atlantic Ocean, and the increased presence of Russian submarines in the GIUK gap requires the full attention of the United States and our allies. As you

know, vital communications cables run along the ocean floor not far from the GIUK gap—providing internet and communications across the world. In December, the Washington Post published an article about increased Russian submarine activity near these cables and the British military has raised alarms over this as well. How are you working to address the vulnerability the GIUK gap presents? How can we prevent Russian submarines from exploiting it? Are we doing enough to ensure Russia does not gain a strategic advantage in this region?

Secretary MATTIS. The Department of Defense is keenly aware of Russia's activity in the North Atlantic, and is taking robust steps—both multilaterally and through NATO—to preserve our security at sea and on both sides of the Atlantic. In May, Admiral Richardson announced that we would reconstitute the U.S. 2nd Fleet, which will oversee our naval assets along the U.S. East Coast and northern Atlantic Ocean. It will also plan and conduct maritime, joint, and combined operations and will train, certify, and provide maritime forces to respond to global contingencies.

General DUNFORD. We recognize the threat that this capability represents. To address the growing Russian naval capabilities the United States Navy is reviving the 2nd Fleet, which will be based in Norfolk, Virginia and part of the NATO Joint Forces Command. The United States and NATO do not seek to prevent Russian submarines from transiting through GIUK gap, but will monitor them. We are recapitalizing the Integrated Undersea Surveillance System, enhancing our ability to detect submarines. The U.S. also has the means to combat enemy submarines—with P–8 *Poseidons* from the air, *Arleigh Burke*-class destroyers from the surface and U.S. nuclear-powered submarines underwater. In addition, nearly all of NATO's 29 countries have navies to assist in anti-submarine warfare. To ensure we do not lose our strategic advantage, we are now dedicating more time for our Carrier Strike Groups to operate in the Atlantic. This includes enhancing the participation of these assets in exercises with allies and partners to ensure appropriate levels of readiness and interoperability.

40. Senator BLUMENTHAL. Secretary Mattis and General Dunford, what do you assess Russia's intentions to be with their activity near undersea cables? How concerned should we be? Have you discussed this issue with our allies?

Secretary MATTIS. During the Cold War, the Soviet Navy had plans to damage cables associated with underwater acoustic arrays in order to protect their deploying submarines. Regardless of Russia's current intent, the United States is prepared to respond to any challenge that threatens its critical interests, and is working closely with Allies to enhance its defense posture in the North Atlantic.

General DUNFORD. Russia is clearly taking an interest in NATO and NATO nations' undersea infrastructure. We and our allies are undertaking prudent measures to ensure that any such activity cannot disrupt essential communications. The undersea lines carry nearly all of the communications on the internet, facilitating trillions of dollars of daily trade. The Russian underwater activity is a concern and we are taking appropriate steps to mitigate the threat. As General Scaparrotti has mentioned, the Russian undersea activity is on a scale not seen since the 1980s. In the near future the U.S. Navy will be reactivating 2nd Fleet in Norfolk, Virginia to better protect the Homeland and address resurgent submarine activity. Our allies recognize the need for a new Maritime Focused Command and are supportive of creating a third NATO Joint Forces Command dedicated to protecting the Atlantic.

F–35

41. Senator BLUMENTHAL. Secretary Mattis, the F–35 brings a tremendous leap in capabilities over legacy 4th generation aircraft that are fundamental to executing and surviving in multi-role fighter missions in Anti-Access, Area Denial environments. This committee hears your concern about affordability with sustainment costs, but I understand there is a major effort underway to address that issue. The Nation can ill afford to reduce the number of F–35s it plans on buying, as we need 5th generation aircraft in large numbers. We have made that mistake before on previous programs, and we should not do it again. In your testimony this month before the House Armed Services Committee and in your prepared statement before this Committee you stated, "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." Would you agree that these two aircraft are not equivalent from a performance and capability stand-point, and that the F–35 has superior capabilities?

Secretary MATTIS. I do agree that the F–35 and F/A–18 do not have equivalent performance and capability characteristics. Stealth technology and advanced integrated systems enable the F–35 to counter rapidly evolving air-to-air and surface-to-air threats, which cannot be matched by fourth-generation aircraft, even with

planned modernization efforts for aircraft like the F/A–18. In the case of the U.S. Navy, it has always been the plan for the F–35 to complement the F/A–18E/F in a mixed future Carrier Air Wing.

42. Senator BLUMENTHAL. Secretary Mattis, we are seeing progress with the F–35 program as exhibited by the recent completion of the System Development and Demonstration (SDD) phase this month. To date, we have been producing aircraft concurrently with development, which I believe has saved taxpayers hundreds of millions of dollars; however, one way to drive down cost is to increase production. As we have yet to reach full rate production, is the DOD committed to getting to full rate production for the F–35? When do you anticipate we will reach full rate production? Do you agree that production level increases will contribute to cost savings?

Secretary MATTIS. The Department is committed to reaching full rate production with the F–35 program. Prior to reaching that decision point, the program will conduct Initial Operational Test and Evaluation (IOT&E). A robust, challenging, and stressing IOT&E enables the Department to validate the operational suitability and effectiveness of the aircraft prior to transition to full rate production. IOT&E is projected to begin later this fall, with completion in 2019. The Department will commence full rate production decision activities once IOT&E completes and the Director, Operational Test and Evaluation submits the required assessment. I agree that increased production rates contribute to lower unit costs.

43. Senator BLUMENTHAL. Secretary Mattis, the fiscal year 2019 DOD Budget Request includes a handful of requests for Multi-Year Procurements (MYP) for aircraft like the F/A–18 Super Hornet and C–130J Hercules. Will the DOD look to a five-year MYP of F–35s to reduce the cost of procurement during full rate production and ensure stability with the supply chain?

Secretary MATTIS. The Department is currently assessing all appropriate options for F–35 procurement; execution of the selected option will commence once a full rate production decision is reached. A five-year multi-year procurement is one of the options.

44. Senator BLUMENTHAL. Secretary Mattis, as the National Defense Strategy has outlined, the primary concern in U.S. national security will be inter-state strategic competition. What 5th generation capabilities from the F–35 will counter the threats of inter-state peer and near peer threats? How will the F–35 make the joint force more lethal, survivable, and capable?

Secretary MATTIS. The F–35 is the premier multi-mission, fifth generation strike fighter operating today and provides our warfighters unprecedented game changing technology. Stealth technology and advanced integrated systems enable the F–35 to counter rapidly evolving air-to-air and surface-to-air threats. With unmatched lethality the F–35 is able to execute all assigned missions in Strategic Attack, Close Air Support, Suppression of Enemy Air Defenses (SEAD), Destruction of Enemy Air Defenses (DEAD) and Offensive and Defensive Air Superiority. The unique F–35 partnership features joint and coalition interoperability together, ensuring that future operations can be executed more efficiently and effectively. The F–35's interoperability allows seamless information exchanges making every participant in the battlespace smarter, more lethal, and more survivable. The F–35 offers the U.S. military a transformational capability that will fundamentally change the way our Nation operates around the globe—the F–35 aligns with and plays a central role in driving the Department's National Defense Strategy.

QUESTIONS SUBMITTED BY SENATOR MAZIE HIRONO

RECRUITING AND RETENTION

45. Senator HIRONO. Secretary Mattis and General Dunford, DOD's Fiscal Year 2019 Budget Request calls for end strength increases for all of the services, totaling nearly 26,000 personnel across the Active, Reserve and Guard components. All of the services have testified that nearly 70 percent of young people in the United States cannot qualify for military service. On top of that, we are seeing near record low unemployment levels and the Army just announced this week that it is not on track to reach its recruiting goal for this year. Do you anticipate difficulties in being able to meet recruiting goals given the current environment and required standards?

Secretary MATTIS. The tightening of the labor market and the increased recruiting missions will be a challenge in the coming year. It is critical that the Military Services have the resources needed to face these challenges.

General DUNFORD. The tightening of the labor market and the increased recruiting missions will be a challenge in the coming year. It is critical that the Services have the resources needed to face these challenges.

CIVILIAN WORKFORCE

46. Senator HIRONO. Secretary Mattis, while the DOD's Fiscal Year 2019 Budget Request includes a 2.6 percent pay increase for military personnel, the President's Budget Request freezes civilian pay and aims to decrease the frequency of step increases. The budget request estimates there will be over 776,000 civilian employees at DOD in fiscal year 2019. What is the impact on DOD's ability to recruit and retain the highly skilled and qualified civilian workforce that provides the backbone to our military forces if civilian pay does not at least keep up with inflation?

Secretary MATTIS. Annual pay raises are one element of the Department's ability to attract and retain civilian personnel and address pay disparities. Annual pay raises assist in meeting mission critical recruitment and retention goals. The Department has a wide range of authorities and incentives focused on the recruitment and retention of a highly-qualified and talented civilian workforce. The Department will continue to utilize all the authorities and tools at its disposal in order to mitigate any impacts resulting from a potential pay freeze while maintaining a mission-ready civilian workforce sized to regenerate and sustain readiness and enhance lethality.

47. Senator HIRONO. Secretary Mattis, The Defense Business Board did a February 2018 study that noted that in fiscal year 2016, DOD spent $141 billion on 777,000 service contractors, or 24 percent of its top line, nearly double the $71.5 billion it spent on 740,000 civilian employees. Additionally, the Department spent slightly more on contract services as it did on MILPERS ($141 billion compared to $136 billion). Is this an appropriate balance of the MILPERS, Civilian and Contract workforce?

Secretary MATTIS. The Department's Total Force—Active and Reserve military personnel, civilians, and contracted services—execute missions of incredible breadth and scope, in locations around the globe. Successfully executing these missions in a way that is not only effective but also cost-efficient, requires the right type, mix, and level of talent from all elements of our Total Force. There is no single, pre-determined Total Force solution—the right mix or balance will vary based on mission, operating environment, labor market, and resourcing. It is therefore critical that we continuously review and rationalize our Total Force mix, to ensure that the most appropriate source of labor—be that military, civilian, or contracted services—is being used to meet the Department's mission.

ENERGY RESILIENCE

48. Senator HIRONO. Secretary Mattis and General Dunford, Energy resilience and assurance is a vital component to our national security. The need to reduce energy consumption, use alternative energy sources, and increase resilience is closely tied to our overall national security. Specifically, I am concerned of threats in the Pacific region that could disrupt fuel delivery or electricity supplies. In the region, DOD relies on vulnerable fuel and electric supplies to conduct its military operations, where electric power outages on military bases or fuel supply disruptions due to natural disasters or intentional actions could disrupt critical military operations in the Indo-Pacific region. How has the Department prioritized its energy needs in this budget request?

Secretary MATTIS. As indicated in the National Defense Strategy, resilient forces and facilities are an important component of deterring and defeating adversaries. The Department continues to evaluate the warfighting risks of our dependence on large amounts of energy, primarily petroleum, and is adapting the training and equipment employed by our forces around the globe. In support of this effort, the Fiscal Year 2019 President's Budget Request includes over $2.8 billion for new equipment, revised plans, concepts, and wargames to account for increasing risks to logistics and sustainment, and enhancements to how the Department considers energy in developing new capabilities. We continue to conduct campaign analyses and wargames to identify the tradeoffs and risks of energy dependence, and foster the development of innovative mitigation strategies to ensure our success. To relieve the dependence of contingency bases on vulnerable fuel supply chains and increase our operational reach, the Department also is exploring reliable and cost effective

distributed energy sources and improved power generation and storage. These initiatives are designed to reduce risk from our dependence on petroleum and to increase our resilience and improve future capability across the range of military operations.

General DUNFORD. The Department identified more than $2.8 billion for the execution of operational energy initiatives in fiscal year 2019. These investments procure new or upgrade existing equipment, improve propulsion, and adapt plans, concepts, and wargames to account for increasing risks to logistics and sustainment, and enhance the role of energy considerations in developing new capabilities. Separate from these investments, the fiscal year 2019 budget also includes an estimated $9 billion request for 86.2 million barrels of fuel.

49. Senator HIRONO. Secretary Mattis and General Dunford, Can you discuss these energy resilience priorities in terms of both operational fuel and delivery of electricity to your military installations?

Secretary MATTIS. The Department of Defense (DOD) has policies in place to ensure all military installations are energy resilient and they have the energy they need to operate their critical missions in the event of power disruption. Installation energy resilience priorities and requirements are articulated in DOD Instruction 4170.11, Installation Energy Management (Change 1, Effective March 16, 2016). This instruction requires the Military Departments to take necessary steps to plan and have the capability to ensure available, reliable and quality power to continuously accomplish DOD missions from our installations and facilities.

Specifically, DOD Components are required to:

- Clearly define, identify and update critical energy requirements that align to critical mission operations in collaboration with tenants, mission owners and operators of critical facilities on DOD installations.
- Perform periodic vulnerability assessments to gauge the risk of energy disruptions on our installations and implement remedial actions to remove unacceptable energy resilience risks.
- Provide candidate energy projects that address the DOD energy resilience requirements during the planning, programming, budgeting and execution process.

Focusing on priority installations, DOD is developing Installation Energy Plans to articulate strategies for addressing energy resilience.

General DUNFORD. The Services and Combatant Commands include risk assessments for energy disruptions in planning activities. Incorporating operational energy in wargames, exercises, and planning creates a partnership with industry to test developing capabilities. This government-industry partnership facilitates new operational concepts and strategy development articulated in the operational energy improvements section of the Fiscal Year 2019 Defense Budget. These considerations help inform future system designs and help the Department make holistic energy logistics and infrastructure decisions to prioritize energy resilience with combat capability requirements. Although the Joint Staff does not program for electricity infrastructure, we are working in concert with Secretary Mattis and his staff to prioritize and address energy requirements for support of military missions.

CYBER SECURITY

50. Senator HIRONO. Secretary Mattis and General Dunford, over the course of several hearings in this Committee this year, numerous Combatant Commanders and Service Chiefs have testified to the lack of a consolidated, whole-of-government strategy for cyber operations. As other countries, such as China, begin to consolidate and integrate their cyber operations, are we losing a competitive advantage in cyber space by not doing so as well?

Secretary MATTIS. The United States can most effectively advance our interests in cyberspace through coordinated U.S. Government actions that are tightly aligned and mutually reinforcing. The Department of Defense already participates in a robust interagency policy development and implementation process through the National Security Council (NSC) and through direct communications with other departments and agencies. The Department is working with the NSC and our interagency partners to build on the direction provided by the 2017 National Security Strategy, including supporting the development of a national cyber strategy and with a new cyber strategy for the Department. I am confident that these efforts will enable us to compete more effectively in cyberspace.

General DUNFORD. Yes. There is mounting empirical evidence that the mitigation approaches used over the past decade have been ineffective. Fortunately, the 2018 National Defense Strategy emphasizes that our ability to prevail in strategic cyber

competition requires the seamless integration of all instruments of national power. A whole-of-U.S. Government approach for protecting, defending, and operating in cyberspace must include new, DOD operational concepts and authorities to persistently defend forward, new cybersecurity legislation to improve the resiliency of privately owned information technology, and a national recommitment to improving STEM education.

51. Senator HIRONO. Secretary Mattis and General Dunford, do you believe the U.S. should develop a national strategy to consolidate and integrate our cyber operations?

Secretary MATTIS. The 2017 National Security Strategy provided guidance to departments and agencies about how to advance U.S. national interests in cyberspace. The Department is currently moving forward with several interagency efforts to add additional cyber-specific detail to guide implementation of the National Security Strategy, including clarifying the United States' objectives in cyberspace and detailing the cyber roles and responsibilities of Federal departments and agencies. I am confident that these efforts will improve the U.S. Government's ability to consolidate and integrate our cyberspace activities.

General DUNFORD. The National Security Strategy and National Defense Strategy highlight a robust U.S. cyber capability, integrated across the interagency, as a key U.S. strategic priority. The forthcoming DOD Cyber Strategy will implement this strategic vision across the DOD. Currently DOD is working closely with the Department of Homeland Security, the Department of Justice, the law enforcement community, the State Department, and with the Intelligence Community, as well as with our international partners to ensure our cyber efforts are coordinated in a way that creates maximum advantage for the Nation. A comprehensive national strategy would be helpful in formalizing the roles and responsibilities for each member of the inter agency, enhancing the WOG approach.

CORROSION CONTROL

52. Senator HIRONO. Secretary Mattis, in its April 2018 report to Congress, the Department of Defense underscores the Corrosion Prevention and Oversight Office's success in reducing the annual cost of corrosion by $2 billion, achieving an 14:1 average return on investment on its corrosion reduction projects, reducing downtime of weapon I systems attributable to corrosion by 10 percent and enabling and partnering with the Services and industry to continually improve corrosion reduction efforts and reduce duplication. Considering the significant reorganization taking place within the Department, how will the Department assure that CPO continues to have the authority to continue and build on its success in preventing and mitigating corrosion of DOD weapon systems and infrastructure?

Secretary MATTIS. In the April 2018 report to Congress, the Department reaffirmed the value and necessity of the functions and responsibilities of the Corrosion Policy and Oversight Office and recognized its impressive achievements in reducing the cost of corrosion, increasing the availability of weapons systems while endeavoring to increase efficiencies and economies throughout the Department. The Department supports the Corrosion Policy and Oversight Office's functions and responsibilities. As the Department reorganizes as directed in the National Defense Authorization Act for fiscal year 2017, the Corrosion Policy and Oversight Office has been placed within the Office of the Under Secretary of Defense for Acquisition and Sustainment and will be part of the responsibilities of the Assistant Secretary of Defense for Sustainment. I believe this alignment will allow for leveraging complementary processes and focus areas and better integrate and enhance the Corrosion Policy and Oversight Office's capabilities.

53. Senator HIRONO. Secretary Mattis, in testimony before this committee, you stated that the Department is pursuing acquisition reforms that yield efficiencies that free up resources to be reinvested to increase current and future readiness. However, the Department's report shows a drastic decline in the amount of funding allocated to the Corrosion Prevention and Oversight Office CPO, a program that clearly fosters these reforms and efficiencies. What assurances can the Department provide that CPO will have sufficient funding to support current and future efforts?

Secretary MATTIS. Continuously striving to increase efficiencies and economies in our business processes is a key pursuit for the Department and an effort that ultimately enhances our ability to support the Warfighter. The Corrosion Policy and Oversight Office (CPO) is at the forefront of Department's efforts to eliminate duplicative corrosion functions across the Services, while minimizing corrosion specifications, standards, and regulations. Given CPO's substantial contributions towards ef-

ficiencies and reforms, the Department continues to program and budget funds to support the full implementation of CPO functions and requirements, both present and planned.

QUESTIONS SUBMITTED BY SENATOR MARTIN HEINRICH

STATE DEPARTMENT

54. Senator HEINRICH. Secretary Mattis, I think it is safe to say that our diplomatic personnel at home and abroad lacked sufficient leadership and direction over the last year from the State Department. How important is a strong and well-staffed State Department to the military's mission overseas?

Secretary MATTIS. It is extremely important. A strong, well-staffed Department of State is critical to the success of our overseas military mission. As I often say, our military enables our Nation's professional diplomats; it buys time for diplomats to solve basic problems.

GLOBAL ENGAGEMENT CENTER

55. Senator HEINRICH. Secretary Mattis, in February the Department of Defense signed an interagency agreement with the Global Engagement Center, which was tasked with developing, integrating, and synchronizing efforts to counter foreign government disinformation and propaganda across the United States Government in the Fiscal Year 2017 NDAA. DOD has a critical role to play in this effort, which is why the fiscal year 2017 NDAA and the subsequent provisions in the fiscal year 2018 NDAA reinforcing it, clearly establish Congress' intent for DOD to make operational and budgetary contributions to this important interagency effort. The DOD portion of the funding was authorized at up to $60 million per year for fiscal year 2017 and fiscal year 2018. DOD has only pledged $40 million, and to my knowledge has not actually transferred any of it—despite the interagency agreement to do so, legislation calling for it, and multiple Congressional inquiries from Members of this committee, SFRC, HASC, and HFAC. Secretary Mattis, what is the status of the transfer of DOD funds to support the Global Engagement Center?

Secretary MATTIS. In May 2018, the Office of the Under Secretary of Defense (Comptroller)(OUSD(C)) will submit a request to reprogram $40 million in support of the Global Engagement Center (GEC) within the Department of State (DOS).

Pursuant title 10 USC §2215, the Department of Defense (DOD) will also be submitting a certification to the congressional defense committees that making the funds available to the DOS in support of the GEC is in the national security interest of the United States.

56. Senator HEINRICH. Secretary Mattis, what operational support is DOD planning to provide to the GEC with regards to staffing, information-sharing, and leveraging unique DOD platforms and capabilities?

Secretary MATTIS. The Department of Defense (DOD) has a collaborative relationship with the Department of State's (DOS) Global Engagement Center (GEC) in which we are developing pilot programs aligned with defense priorities for countering state and non-state actors' propaganda and disinformation. The insights generated from these pilot programs will be shared across the United States Government. DOD contributes detailees to the GEC's staffing who aid in information-sharing and integration with unique DOD platforms and capabilities, including military information support operations web operations capabilities. DOD seeks to maintain its collaborative relationship with DOS's GEC and sees the potential for the GEC to play a greater role in coordinating whole-of-government efforts to counter state-actor disinformation and propaganda.

SOUTHWEST BORDER

57. Senator HEINRICH. Secretary Mattis, to date, the estimated cost of the National Guard deployments to the Southwest Border to support a Department of Homeland Security mission is $182 million. How is the Department of Defense going to pay for these deployments?

Secretary MATTIS. National Guard personnel requirements are being filled incrementally as available forces and assets are identified, and as Customs and Border Patrol confirms its readiness to receive forces. For estimating purposes, our projection assumes approved Guard personnel will all arrive at their designated locations during the month of April. The cost of the ongoing incremental deployment is being cash flowed from the Guard's Operation and Maintenance and Military Personnel accounts. The Army National Guard's Fiscal Year 2018 Operation and Maintenance

and Military Personnel appropriations are large accounts, which total to $7.3 billion and $8.3 billion, respectively. Therefore, these accounts have the ability to initially cash flow these costs, but how long depends on a number of factors, which we are working, including how fast the National Guard can identify personnel to fill the approved requirements. We will identify options to reimburse the Guard's accounts once we have a full estimate for the fiscal year 2018 costs. As we work to identify sources to pay for the National Guard support to the Southwest Border we will protect readiness.

TECHNOLOGICAL OVERMATCH / REFORM

58. Senator HEINRICH. Secretary Mattis, during the Emerging Threats and Capabilities Subcommittee hearing last week, Dr. Griffin told us that your guidance to him was to "make sure we never have to fight a fair fight." I completely agree with this sentiment and think that one of the most critical pieces of that is ensuring we maintain technological overmatch against our adversaries. How can you instruct the rest of the Department and the Services to prioritize results over risk aversion, and do you believe you have the authorities, protections and incentives you need to help drive these efforts?

Secretary MATTIS. I will rely heavily on both the Deputy Secretary of Defense and the Under Secretary of Defense (Research & Engineering) (USD((R&E))to promote an environment where we are not afraid of failure in prototyping, learning quickly from those failures, and thereby assuming acceptable risk and avoiding costly mistakes later in the acquisition process. Leadership across the Department, including the Services, must continue to be at the forefront of pursuing the technologies and capabilities that will keep the United States far ahead of our adversaries in the coming decades. While I appreciate congressional support and authorities given to highlight the importance of the office of the USD(R&E) in this effort, there are authorities, protections, and incentives that we don't know yet, but will discover as necessary in the coming months and years. I ask Congress continue to be receptive to requests from myself, the Deputy Secretary, and the USD(R&E) with regards to additional Congressionally-granted tools in the future.

SPECIAL OPERATIONS FORCES OP-TEMPO

59. Senator HEINRICH. Secretary Mattis and General Dunford, our special operations forces have met an insatiable demand for their skills in the current counter-terrorism and counter-insurgency fight. What are you doing to ensure the sustainable readiness of our special operations forces?

Secretary MATTIS. While the demand for Special Operations Forces (SOF) remains high, SOF readiness is improving as U.S. Special Operations Command (USSOCOM) takes steps to ensure that SOF are deployed at more sustainable rates and to prioritize the demand for these forces more effectively. The majority of SOF formations are currently meeting or exceeding my deployment-to-dwell objectives. In addition, I have directed the Department to undertake efforts to evaluate our current SOF-assigned missions and identify for me any missions that may be transferred to the conventional forces, our allies or partners, or divested. I expect the outcome of these efforts to improve SOF's readiness and align their missions and activities with the National Defense Strategy.

General DUNFORD. Our Special Operations Forces (SOF) continue to accomplish all assigned priority tasks in support of steady state operations and are able to surge to support our most demanding Operational Plans with limited impacts. Rotational sourcing currently executes at a sustainable readiness level for the majority of SOF. In line with Defense guidance, SOF prioritizes and synchronizes activities to support geographic combatant commanders and protect our Nation's interest, as challenges increase in frequency and complexity. Our latest calculations show a continued positive trend—the vast majority of SOF meet the Secretary's-directed goal of 1:2 deployment to dwell (D2D) for active forces and 1:5 for reserve forces and we expect 100 percent compliance in 2018. Across SOF, we are implementing initiatives and prioritizing requirements to balance demand and support operations—while still improving capability for near-peer competitors. These actions ensure SOF support the GCCs with an appropriately tailored force while maintaining the dwell ration. Finally, I have directed a review of current SOF tasked missions to identify those not requiring SOF-unique capabilities that may be transitioned to conventional or international forces.

60. Senator HEINRICH. Secretary Mattis and General Dunford, are there high demand capabilities for our special forces that we should be investing in now as to address the reemergence of near-peer competition?

Secretary MATTIS. To address the scope and pace of our competitors' and adversaries' ambitions and capabilities, we must invest in the modernization of key capabilities through sustained, predictable budgets. For our special operations forces, we will require additional investments in special operations mobility and intelligence, surveillance, and reconnaissance (ISR) platforms that can operate in denied areas in all domains (land, sea, air, and space). We need to focus on technology advancements, including artificial intelligence, directed energy, and cyber capabilities. Finally, we need to invest in our most valuable resource: our people.

General DUNFORD. Yes, our Special Operations Forces (SOF) are actively addressing the reemergence of near-peer competition by instituting a deliberate budgeting solution in the Fiscal Year 2020 Program Objective Memorandum. This investment revitalizes USSOCOM's ability to rapidly respond to emerging near-peer threats and enhances critical combat capabilities that may be applied against principal and strategic competitors through modernization and the development of "Big Bets." These investments and developments do NOT come at the expense of our on-going counterterrorism efforts and capabilities, but are a deliberate shift to ensure supremacy against competitor capabilities. Some of these investments include:

- Laser-Enabled Platforms
- Hyper-Enabled Operators
- Next-Generation Targeting
- Next-Generation Communications
- Modification of Mobility platforms
- Adaptive Countermeasures
- Next-Generation Navigation
- Fossil-Fuel-Divested Ground Mobility
- Enhancements to national crisis response capabilities
- Maritime-Assured Access
- Next-Generation SOF rotary wing
- SOF–Specific Space-Based capabilities
- Next-Generation Radar Capability
- Organic Precision Strike

APPENDIX A

HSGAC

MINORITY STAFF REPORT

FAST CARS, EASY MONEY:

How the Pentagon Mismanaged the Afghanistan Legacy Program



UNITED STATES SENATE
Committee on Homeland Security & Governmental Affairs
Ranking Member Claire McCaskill

April 26, 2018

Executive Summary

The Legacy and Afghanistan Source Operations Management (ASOM) Programs, an expensive American effort to build the intelligence capacity of Iraq and Afghanistan security forces from 2007 to 2016, have been repeatedly scrutinized by Ranking Member Claire McCaskill and other federal officials, including the Defense Contract Audit Agency (DCAA) and the Special Inspector General for Afghanistan Reconstruction (SIGAR). In August 2017, Ranking Member McCaskill revealed extensive financial abuses by the subcontractor on the Legacy Program contracts, which had spent over $51 million on, among other things, luxury cars, exorbitant salaries, and unallowable airfare.

While the Army was responsible for executing the Legacy and ASOM Program contracts, a small office in the Pentagon, the Combating Terrorism Technical Support Office (CTTSO), developed the program. At the time of the Legacy Program, the Program Manager for CTTSO was Richard Higgins, a subsequent White House aide whose controversial statements ultimately resulted in his widely-publicized dismissal from the National Security Council in 2017.

The Legacy Program was executed by a contractor named Jorge Scientific Corporation, later known as Imperatis Corporation (Imperatis), which has since become insolvent. This company first attracted the attention of Senator McCaskill in 2012, when allegations arose of drug and alcohol abuse and other misconduct at its compound in Kabul. Last year, Ranking Member McCaskill learned that at the same time Imperatis personnel were reportedly getting drunk and high in Afghanistan, its subcontractor was billing taxpayers for Bentleys, Porsches, and other luxury cars under the contract.

At the request of Ranking Member McCaskill, minority Committee staff sought to determine who was responsible for the Legacy Program and how the contract was awarded. The investigation also sought to determine how such egregious costs could have been approved, whether they would be recovered, and what sort of oversight the military had over the effectiveness of the program. Key findings include:

Nearly all work on the contracts passed through to the subcontractor, NCC.

- The subcontractor, New Century Consulting (NCC), pitched the program and did the vast majority of the work in the Legacy and ASOM Programs—an estimated 80% on the Legacy Program contracts. NCC's CEO, Michael Grunberg, was previously involved in a scandal related to international arms deals. Mr. Grunberg has also been employed by private military companies involved with conflicts in Papua New Guinea, Sierra Leone, and Liberia, and he has connections to multiple diamond companies associated with nonstate activity in West Africa.

- The Department of the Army (Army) acknowledged that if Ranking Member McCaskill's 2013 contracting reform legislation had been in place at the time of the Legacy Program contracts, then it would have at least had to justify allowing NCC to perform the overwhelming majority of the work, and might have disallowed it.

The original Legacy contract was both developed by the subcontractor and steered towards it.

- NCC, rather than the prime contractor, originally pitched the program to Mr. Higgins's office.
- Though Mr. Higgins's office claimed it had no influence on NCC's pursuit of subcontractor work on Legacy Program, his office notified NCC that Imperatis was in line to win the Legacy Program contracts and made contact arrangements for NCC.

The contract award process lacked effective competition. CTTSO and the Army relied on an obscure contracting vehicle to award and continue the Legacy Program.

- The Legacy Program was awarded using a "research and development" contract vehicle that never mentioned training or mentoring security forces, but instead called for research proposals in hard sciences like chemistry, electronics and physics. The award hinged on a passing reference to "HUMINT", human intelligence, that occurred once in a nearly 150-page proposal.
- Proposals accepted under these types of contract vehicles, known as Broad Agency Announcements (BAAs) do not need be competitively bid, even if they are unique. Minority staff found no evidence that the Army received any other training and mentoring proposal for the Legacy Program contracts.
- The Department of Defense (DOD) continued to use the BAA "research and development" vehicle to award further Legacy and ASOM Program contracts long after the Legacy Program had been established and was no longer new.

The performance and financial oversight of the Legacy and ASOM contracts was deficient.

- The Legacy and ASOM Programs failed to establish adequate quantitative metrics measuring the programs' progress, making it difficult to identify the effectiveness of the programs.
- Although the DCAA successfully identified $51 million in egregious costs under the Legacy Program contracts, post-performance audits are not a fully reliable method for preventing waste, fraud and abuse.
- DCAA's audit only investigated costs between 2008 and 2013, and was not completed until 2016—nearly three years after that period ended and almost eight years after the first costs were incurred. Its audit of the remainder of NCC's costs will not be complete until later this year. DCAA's audit backlog, a longstanding concern of Ranking Member McCaskill, has resulted in an audit inventory whose average age is 14 months.
- Prior to DCAA's audit, Imperatis filed for bankruptcy, meaning that the government may never recover its claim submitted after DCAA completed its work.

Despite egregious waste and an investigation of NCC by the Army's Criminal Investigative Command (CID), the Army continues to allow NCC to receive government contracts and subcontracts.

- In April 2016, NCC entered into a subcontract with a prime DOD contractor, Raytheon, that continues to this day. In December 2014, the Army awarded NCC a research and development contract with a ceiling of more than $83 million that continued through September 2017.

- The Army has elected to delay a decision to suspend or debar NCC until after CID's investigation is complete, even though a CID investigation of the prime contractor took over two years.

I. Legacy Program Organization and Structure

The Legacy Program was an American effort to build the intelligence capacity of Iraq and Afghanistan security forces. The Legacy Program was executed by a contractor originally named Jorge Scientific Corporation, later known as Imperatis Corporation (Imperatis). Imperatis bid on the contract, was awarded the contract, and served as the prime contractor until September 2013, when the Legacy Program transitioned into ASOM Program and a new contract was awarded.[1]

While the Army was responsible for executing the Legacy and ASOM Program contracts, a small office in the Pentagon developed the program, or "requirement," to be bid out. The office, Combating Terrorism Technical Support Office (CTTSO) falls under the Assistant Secretary of Defense for Special Operations/Low-Intensity Conflict (SOLIC). Typical CTTSO contracts are worth anywhere from $500,000 to $1 million, and expected to deliver within 12 to 24 months. The office's base budget is roughly $70 million a year.[2] At the time of the Legacy Program, the Program Manager for CTTSO was Rich Higgins, who has a history of provocative positions and statements, one of which resulted in his widely-publicized dismissal from the National Security Council last year.[3]

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[1] Special Inspector General for Afghanistan Reconstruction, Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics (July 27, 2017) (SIGAR 17-57-AR).

[2] Department of Defense, Technical Support Working Group, Combating Terrorism Technical Support Office (https://www.tswg.gov/?q=vendors_about) (accessed Jan. 30, 2018); *Counterterrorism Rapid Acquisition Group Touts its Success*, National Defense (Dec. 20, 2017) (http://www.nationaldefensemagazine.org/articles/2017/12/20/counterterrorism-rapid-acquisition-group-touts-its-success).

[3] Mr. Higgins authored a controversial memo entitled "POTUS & Political Warfare" arguing that the Trump Administration is "suffering under withering information campaigns designed to first undermine, then delegitimize and ultimately remove the President." In the memo, Mr. Higgins names several adversaries of President Trump, including the mainstream media, academia, the "deep state", global corporations and bankers, the leadership of both political parties, and "Islamists." The release and circulation of Mr. Higgins's memo resulted in his dismissal from the NSC. *See, e.g., An NSC Staffer is Forced Out Over a Controversial Memo*, The Atlantic (Aug. 2, 2017) (https://www.theatlantic.com/politics/archive/2017/08/a-national-security-council-staffer-is-forced-out-over-a-controversial-memo/535725/); *White house Aide Forced Out After Claim of Leftist Conspiracy*, The New York Times (Aug. 11, 2017) (https://nyti.ms/2uOHH4j); *Memo highlights friction within White House National Security Council*, CNN (Aug. 11, 2017) (http://www.cnn.com/2017/08/11/politics/mcmaster-memo-wh-struggle/index.html).

The Legacy Program arose from a 2007 counterinsurgency pilot program.[4] The Army awarded Imperatis a contract to address intelligence deficiencies in counterinsurgency, the global war on terrorism, and counter transnational threats.[5] Specifically, Imperatis and its subcontractor NCC were tasked with embedding mentors alongside select Iraqi and Afghani police and military intelligence to help professionalize their operations.[6]

The Army applied the Legacy Program to Afghanistan through an additional four contracts to Imperatis valued at over $314.4 million.[7] Each new contract was considered a new "pilot," ostensibly to determine the effectiveness of the Legacy Program in a new territory.[8] The first, Legacy Afghanistan, was granted between April 2010 to May 2012, and valued at $42.3 million;[9] The second, Legacy South, was a cost-plus-fixed-fee term[10] contract granted between July 2010 to May 2012, valued at $47.9 million; The third, Legacy Kabul was another cost-plus-fixed-fee term[11] contract between September 2010 and May 2012, valued at $46.6 million; The fourth, Legacy East, shifted to a cost-plus-fixed-fee completion[12] contract between October 2011 and September 2013, and was valued at $177.6 million.

Each contract was organized into four chronological phases: First was "recruiting, reception and staging"—which recruited, vetted and prepared training and mentoring personnel; Second was "onward movement and training delivery"— which trained and mentored host nation security forces; Third was "integration and implementation"—which aimed to provide the required information, training support, and mentoring while simultaneously refining appropriate publications and documents for the supported command; And fourth was

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[4] Special Inspector General for Afghanistan Reconstruction, Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics (July 27, 2017) (SIGAR 17-57-AR); Department of the Army, U.S. Army Security Assistance Command, Statement of Work Project Legacy: Professionalization Program Intelligence Management Continuation (copy on file with Committee).

[5] Special Inspector General for Afghanistan Reconstruction, Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics (July 27, 2017) (SIGAR 17-57-AR).

[6] Department of the Army, U.S. Army Security Assistance Command, Statement of Work Project Legacy: Professionalization Program Intelligence Management Continuation (copy on file with Committee).

[7] For the purposes of this report, the four contracts will be collectively referred to as the Legacy contracts. The four components of the Legacy contracts were the following: (1) Legacy Afghanistan, (2) Legacy Kabul, (3) Legacy South, and (4) Legacy East. Special Inspector General for Afghanistan Reconstruction, Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics (July 27, 2017) (SIGAR 17-57-AR); Department of the Army, U.S. Army Security Assistance Command, Statement of Work Project Legacy: Professionalization Program Intelligence Management Continuation (copy on file with Committee).

[8] Office of the Special Inspector General for Afghanistan Reconstruction, Briefing with Minority Staff (Mar. 6, 2018).

[9] Minority Staff could not identify the cost reimbursement structure for the Legacy Afghanistan contract.

[10] FAR 16.306 states that cost-plus-fixed-fee are a type of cost-reimbursement contract in which the contractor is paid a negotiated fee that is fixed at the contract's inception. This type is preferred when the objective is geared towards research performance or preliminary exploration and when the level of effort required is unknown.

[11] FAR 16.307 describes Term forms as general conditions in which the contractor is obligated to devote a specified level of effort for a stated time. Under term forms, performance is satisfactory if the fixed fee is payable at the expiration of the agreed duration, and when the contractor indicates that the work specified has been completed.

[12] Completion forms require the contractor to complete and deliver a specified end product within an estimated cost, if possible, as a condition for payment of the entire fixed fee.

"drawdown, transition and institutionalization"—which required the contractor or subcontractor to develop a logical plan for withdrawal and or transition of capabilities to host nation forces.[13]

Following the conclusion of the Legacy Program contracts in May 2012,[14] the Army requested competitive proposals for a new contract to provide training and mentoring services in Afghanistan. The resulting ASOM contract was awarded to NCC in July 2013 and ran through its conclusion in February 2016.

II. Investigation by Senator McCaskill

On March 12, 2012, two former Imperatis (then-named Jorge Scientific) employees working as contractors on the Legacy Program filed a complaint in the United States District Court for the District of Columbia, alleging that Imperatis employees engaged in "numerous violations of Afghan and U.S. law; international and/or bilateral agreements; and contractual requirements."[15] Specific inappropriate activity included the possession and use of illegal weapons, including grenades; the possession and use of alcohol and drugs; and the intentional defrauding of the U.S. government by misrepresenting the location of Imperatis employees and by submitting forged documentation necessary to perform Imperatis's contractual duties.[16] Senator McCaskill, then-Chairman of the Senate Committee on Homeland Security and Governmental Affairs Subcommittee on Contracting Oversight, began an inquiry into the Army's management and oversight of contracts with Imperatis.[17] Following this inquiry, Army officials informed the Subcommittee that the individuals involved in the misconduct at issue were no longer employed by the company and that leadership in Kabul had been replaced recently.[18]

An initial audit of Imperatis' expenditures from October 21, 2011 through March 15, 2014, was commissioned by SIGAR and conducted by Crowe Horwath LLP. The audit, published in April 2015, revealed a lack of proper reporting and accounting standards, specifically as they related to costs billed by NCC. This resulted in the questioning of over $130 million in costs billed to the U.S. government.[19] Alarmed by the conclusions reached in the Crowe Horwath audit and the large amount of money questioned, Senator McCaskill, then-Ranking Member of the Senate Committee on Homeland Security and Governmental Affairs Permanent Subcommittee on Investigations (PSI), joined by PSI Chairman Rob Portman, wrote a letter to the Commanding General of the Army Contracting Command (ACC), requesting a briefing on the contracts

[13] Department of the Army, U.S. Army Security Assistance Command, Statement of Work Project Legacy: Professionalization Program Intelligence Management Continuation (copy on file with Committee).

[14] Special Inspector General for Afghanistan Reconstruction. Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics (July 27, 2017) (SIGAR 17-57 Audit Report).

[15] Plaintiff's Complaint for Violations of the False Claims Act, 31 U.S.C. §§ 3729, et seq. (March 12, 2012), *United States of America, ex rels. John Melson & Kenneth Smith v. Jorge Scientific Corporation*, D.D.C. (No. 1:12-cv-00389-EGS).

[16] Plaintiff's Complaint for Violations of the False Claims Act, 31 U.S.C. §§ 3729, et seq. (March 12, 2012), *United States of America, ex rels. John Melson & Kenneth Smith v. Jorge Scientific Corporation*, D.D.C. (No. 1:12-cv-00389-EGS).

[17] Letter from Chairman Claire McCaskill, Subcommittee on Contracting Oversight, to Secretary John McHugh, Department of the Army (Oct. 22, 2012).

[18] Letter from Secretary John McHugh, Department of the Army, to Chairman Claire McCaskill, Subcommittee on Contracting Oversight (Nov. 27, 2012).

[19] Special Inspector General for Afghanistan Reconstruction. Department of the Army's Legacy East Project: Jorge Scientific Corporation's Lack of Supporting Documentation Results in about $135 Million in Questionable Project Costs (Apr. 21, 2015) (SIGAR 15-43 Financial Audit).

audited, any other contracts ACC had with Imperatis, and the status of any investigations into Imperatis.[20]

The Crowe Howarth audit led DCAA to perform its own nonpublic audit of NCC, which it completed on August 31, 2016. DCAA examined NCC's incurred costs between 2008 and 2013 and revealed that NCC improperly incurred costs over $50 million, including exorbitant salaries, unallowable travel expenses, and Bentleys, Porsches and other "luxury" cars that were used by NCC executives and their assistants.[21]

In July 2017, SIGAR released a performance audit of the Legacy and ASOM Programs, which examined the programs from 2010 through their conclusion in 2016, questioning their success, effectiveness, and whether or not they were properly monitored. SIGAR concluded that because of a lack of metrics for the Legacy Program and a reliance on contractor-provided data for ASOM, it is almost impossible to gauge the U.S. government's return on investment for the $457.7 million spent on both programs.[22] SIGAR also found that NCC's accounting system was so poor that the government could and should have disallowed its use, but the agencies responsible for contract oversight continued to permit it. Had NCC been required to use a satisfactory accounting system from the beginning, its unallowable costs could have been identified earlier and before the company was reimbursed.

In August 2017, after DCAA's 2016 audit of NCC and SIGAR's 2017 audit report of the Legacy and ASOM Programs were provided to Committee staff, Ranking Member McCaskill sent a letter to DOD Secretary James Mattis, questioning waste of millions of taxpayer dollars spent by NCC.[23] In response, DOD provided Committee staff with an in-person briefing with CTTSO,[24] Army Contracting Command-Aberdeen Proving Ground (ACC-APG), the Defense Contract Management Agency (DCMA), the DCAA, and the Office of the Deputy Assistant Secretary of the Army for Procurement.[25] Following this briefing Committee staff requested white papers, contracts, performance and compliance reports, and statements of work and training manuals related to the Legacy Programs. In response to these requests, DOD provided limited information, including the Legacy Afghanistan, Kabul, South, and East contracts and statements of work, two compliance reports and weekly updates for July 2011 and December 2012, two trip reports from December 2012 and October through November 2013, a monthly status report from June 2013, three Contractor Performance Assessment Reports, two of DCAA's audits of Imperatis, and performance assessments from Army Generals. DOD did not provide Committee

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[20] Letter from Senator Claire McCaskill and Senator Rob Portman to MG Theodore Harrison, U.S. Army Contracting Command (May 12, 2015).

[21] Defense Contract Audit Agency, Independent Audit Report on New Century Consulting Ltd's Proposed Amounts on Unsettled Flexibly Priced Contracts for Fiscal Years 2008, 2009, 2010, 2011, 2012, and 2013 (Aug. 31, 2016) (Audit Report No. 02191-2015T10160001).

[22] Special Inspector General for Afghanistan Reconstruction. Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics (July 2017) (SIGAR 17-57 Audit Report).

[23] Letter from Senator Claire McCaskill to Secretary James Mattis, Department of Defense (Aug. 7, 2017); This letter incorrectly stated the salaries for the executive assistants reached "approximately $420,000 each." The correct average salary reached for the assistants was $190,500 each.

[24] The Combating Terrorism Technical Support Office is an office within the office of the Assistant Secretary of Defense for Special Operations/Low-Intensity Conflict.

[25] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Deputy Assistant Secretary of the Army for Procurement, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

staff with any of the other information requested. In addition, SIGAR briefed minority staff regarding their audit of the Legacy East contracts.

In addition to investigating the Legacy Program contracts, minority staff also attempted to review other DCAA audits that may have identified similar waste, fraud and abuse among other contractors. While DCAA offered an overview of questionable costs that it had identified over the past two years, it refused to provide any further audits to minority staff. Senator McCaskill most recently requested access to these audits at a Senate Committee on Armed Services hearing earlier this month.[26]

This report is a staff analysis of the information received by the Committee.

III. Nearly All Work under the Contracts Passed Through to Subcontractor NCC

In September 2007, the Army, through ACC, awarded an indefinite delivery-indefinite quantity contract to develop the doctrine that would become the Legacy Program to Jorge Scientific Corporation. Founded by Judith Jorge Hartman in 1986, Jorge Scientific Corporation, later rebranded as Imperatis, was a contractor for the United States for decades, and was awarded its first contract with the Departments of Labor and Navy in 1992.[27] Imperatis has had 1,739 contract actions with the United States government since 1992, of which 66% were with DOD.[28]

Following the award of each Legacy Program contract, Imperatis subcontracted a significant portion of the work to NCC. The Army estimated that NCC was responsible for approximately 80% of the work on the Legacy East contract[29]—but that percentage could be even higher. Despite numerous inquiries, minority staff was unable to identify evidence of any substantive work that Imperatis conducted in Afghanistan. According to monthly reports provided by both DOD and SIGAR, all of the mentoring and training of Afghanistan security forces under the Legacy Program appeared to be completed by NCC. NCC takes credit for creating and implementing the Legacy and ASOM Programs on its website.[30] This arrangement effectively made Imperatis a pass-through organization. It operated as the prime contractor in name only, allowing NCC to develop the doctrine and perform the vast majority of the work for the Legacy Program.[31]

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[26] Senate Committee on Armed Services, *Hearing on Posture of the Department of the Army* (Apr. 12, 2018).

[27] Federal Procurement Data System (https://www.fpds.gov/common/jsp/easySearchDocumentController.jsp?agencyID=1152&PIID=11520199209DCCP0502C0020280&modNumber=0&transactionNumber=0&idvAgencyID=&idvPIID=&actionSource=searchScreen&actionCode=&documentVersion=1.0&contractType=AWARD&docType=D) (accessed Jan. 30, 2018).

[28] Of the 1739 contract obligations listed on FPDS, 1148 of them were with some agency with the Department of Defense. Action obligations are the amount of federal government's obligation, de-obligation, or liability, in dollars, for an award transaction. Federal Spending Transparency: DATA Act Collaboration Space (https://fedspendingtransparency.github.io/whitepapers/amount/) (accessed Oct. 24, 2017).

[29] Email from Lieutenant Colonel Michael D. Jones, Legislative Counsel, Office of the Chief, Legislative Division, Department of the Army, to Senate Committee on Homeland Security and Governmental Affairs (Dec. 8, 2017).

[30] NCC's website states that NCC "created techniques for recruiting and handling sources in hostile environments such as Iraq and Afghanistan" through the Legacy Program while crafting a "specialist intelligence program in Afghanistan to support national and provincial police command structures" through its ASOM contracts with the DOD. New Century, The Legacy Model (http://www.newcentcorp.com/the-legacy-model/) (accessed Oct. 24, 2017); New Century, Afghanistan Source Operations Model (http://www.newcentcorp.com/afghanistan-source-operations-model/) (accessed Oct. 24, 2017).

[31] Jorge Scientific Corporation, *Monthly Financial Status Report: March 1st-March 31st 2013* (copy on file with Committee).

NCC is a closely held corporation headquartered in the Channel Islands between Great Britain and France.[32] NCC's website offers only broad descriptions of its business: "capacity building", "intelligence led solutions", "security sector reform", "specialist military training", and "doctrine-based training", providing subject matter expertise, interpreters, and accredited cultural advisors.[33] NCC's current leadership includes CEO and co-founder Michael Grunberg, Chairman and co-founder Colonel Tim Collins (a retired British Army officer), and CFO Guy Hendry.[34] Prior to co-founding NCC, Mr. Grunberg worked closely with a series of companies described as private military firms.[35] He worked for several years as a spokesman and advisor for Sandline International, a British private military company that was involved in conflicts in Papua New Guinea, Sierra Leone, and Liberia, as well as multiple diamond companies associated with nonstate activity in West Africa.[36] In 1998, Sandline was investigated for potential sanctions violations related to a United Nations arms embargo that followed a 1997 coup in Sierra Leone.[37] The company was so deeply involved in a 1997 internal conflict in Papua New Guinea—resulting in a near military coup and the resignation of the prime minister—that the events were dubbed the "Sandline Affair."[38]

Imperatis continued to perform its role as prime contractor for all of the Legacy Program contracts, subcontracting the majority of work to NCC until NCC became the prime contractor for the ASOM Program in 2013.[39] Imperatis ceased all operations on May 9, 2016.[40] Citing "financial distress," Imperatis subsequently filed for bankruptcy and is no longer a contractor with the U.S. government.[41]

Under current procurement law, Imperatis' pass-through arrangement to NCC likely would have been heavily scrutinized, if not prohibited. Ranking Member McCaskill was the chief

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[32] Specifically, NCC is headquartered in the Bailiwick of Guernsey, a self-governing possession of the English Crown. The Crown is the state in all its aspects within the jurisdiction of the Commonwealth realms and their sub-divisions.

[33] New Century, Services and Expertise (http://www.newcentcorp.com/services-and-expertise/) (accessed Oct. 24, 2017).

[34] New Century, Executive Leaders (http://www.newcentcorp.com/about-new-century/#executive) (accessed Oct. 24, 2017); Defense Contract Audit Agency, *Independent Audit Report on New Century Consulting Ltd's Proposed Amounts on Unsettled Flexibly Priced Contracts for Fiscal Years 2008, 2009, 2010, 2011, 2012, and 2013* (Aug. 31, 2016) (Audit Report No. 02191-2015T10160001).

[35] *With One Foot in the Grave,* The New York Times (May 3, 2004) (https://nyti.ms/2GWt3Tk).

[36] *Mercenaries in Africa*, BBC News (Mar. 15, 2004) (http://news.bbc.co.uk/2/hi/africa/3501632.stm); *A Sierra Leone Contract: LETTERS TO THE EDITOR*, International Herald Tribune (Aug. 28, 2001) (http://www.nytimes.com/2001/08/28/opinion/a-sierra-leone-contract-letters-to-the-editor.html); Dean Andromidas, *Sandline scandal causes tremors in Tony Blair's 'Cool Britannia'*, Executive Intelligence Review (June 5, 1998); *Abdel-Fatau Musah and J. 'Kayode Fayemi*, Africa in Search of Security: Mercenaries and Conflicts—An Overview (2000); Ian Smillie, Lansana Gberie, & Ralph Hazlton, *The Heart of the Matter: Sierra Leone, Diamonds & Human Security* (2000).

[37] Parliament of the United Kingdom, House of Commons, *Report of the Sierra Leone Arms Investigation* (July 27, 1998) (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/235405/1016.pdf).; Parliament of the United kingdom, House of Commons, Select Committee on Foreign Affairs, Minutes of Evidence: Appendix 2, Sierra Leone Arms Investigation (Legg Inquiry): Note of a hearing with lt Colonel Tim Spicer OBE (Sandline) held at 2.00 pm on 24 June 1998 (June 24, 1998) (https://publications.parliament.uk/pa/cm199899/cmselect/cmfaff/116/116app05.htm).

[38] *Sir Julius Chan Says He Has No Regrets Over handling of Sandline Affair*, Australian Broadcasting Corporation, (Mar. 17, 2016) (http://www.abc.net.au/news/2016-03-17/no-regrets-over-papua-new-guinea-sandline-affair-sir-julius/7256118).

[39] Department of the Army, ACC- Adelphi, *Afghanistan SOM Contract* (W911QX-13-C-0170) (copy on file with Committee).

[40] *Vendor hired to improve security of OPM's network goes out of* business, Federal News Radio (May 16, 2016) (https://federalnewsradio.com/contractsawards/2016/05/vendor-hired-improve-security-opms-network-goes-business/).

[41] *Vendor hired to improve security of OPM's network goes out of business*, Federal News Radio (May 16, 2016) (https://federalnewsradio.com/contractsawards/2016/05/vendor-hired-improve-security-opms-network-goes-business/).

architect of legislation in 2013 to address pass-through contracting abuses, ensuring that where an offeror on a DOD contract informs the agency it intends to award subcontracts for more than 70% of the total cost of the work to be performed under the contract, the contracting officer must consider alternative contracting vehicles.[42] If the contracting officer determines the offeror who anticipates subcontracting over 70% of the contract out is the best option, it must provide the basis for such determination.[43] Had this reform been in effect beginning in 2007, the Army would have been forced to justify the need for a contracting structure in which NCC performed approximately 80% of the work on the Legacy Program.[44] The Army acknowledged that had that requirement been in place at the time, it might have decided this pass-through contract was unacceptable.[45]

IV. Contracts Developed by NCC, Steered to NCC

Subcontractor NCC, rather than Imperatis, originally pitched the Legacy Program proposal to CTTSO. This finding further questions the need for Imperatis to have served as a prime contractor. In addition, CTTSO advised NCC on how to become the subcontractor for the Legacy Program work. Given that Imperatis became the prime contractor for the Legacy Program, it might be expected that Imperatis would serve as the driving force behind the program. Instead, NCC initially presented to CTTSO in mid-2006 the intelligence gathering and mentoring program that would become the Legacy Program.[46] NCC made a subsequent presentation to the Marine Corps Intelligence Activity (MCIA) in February 2007.[47] Next, Andrew Lomax, a CTTSO contractor supporting Mr. Higgins, the Program Director, informed NCC that Imperatis was in line to secure a contract to execute the Legacy Program in Iraq.[48] CTTSO then provided NCC contact arrangements with Imperatis.[49] In an interview with Committee staff, Mr. Lomax denied that he influenced NCC to seek out Imperatis for work on the Legacy Program.[50] However, his disagreement conflicts with accounts provided by NCC to SIGAR.[51] As NCC stated,

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[42] National Defense Authorization Act for Fiscal Year 2013, Pub. L. 112-239, Sec. 802(1) (2013).

[43] National Defense Authorization Act for Fiscal Year 2013, Pub. L. 112-239, Sec. 802(3) (2013).

[44] The initial contract was awarded to Imperatis by ACC on September 27, 2007. The first task order awarded to Imperatis with NCC as subcontractor was later in September 2007. Special Inspector General for Afghanistan Reconstruction. *Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics* (July 2017) (SIGAR 17-57 Audit Report).

[45] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Director of the Army Staff, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[46] Email from Programme Manager, New Century Consulting, to Office of the Special Inspector General for Afghanistan Reconstruction Staff (Dec. 3, 2016).

[47] Email from Programme Manager, New Century Consulting, to Office of the Special Inspector General for Afghanistan Reconstruction Staff (Dec. 3, 2016).

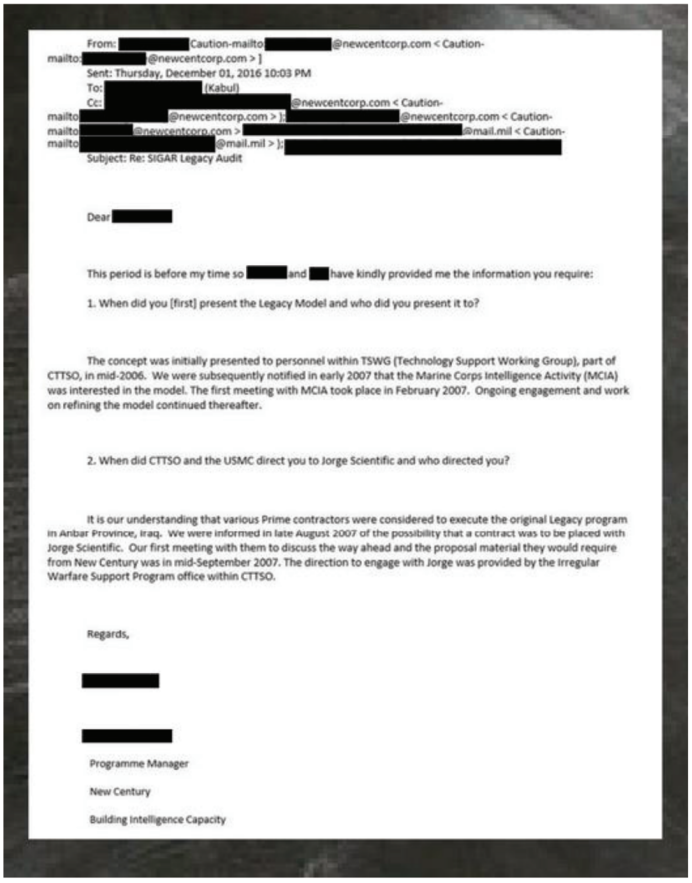
[48] Email from Programme Manager, New Century Consulting, to Office of the Special Inspector General for Afghanistan Reconstruction Staff (Dec. 1, 2016).

[49] Email from Programme Manager, New Century Consulting, to Office of the Special Inspector General for Afghanistan Reconstruction Staff (Dec. 3, 2016).

[50] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Director of the Army Staff, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[51] Email from Programme Manager, New Century Consulting, to Office of the Special Inspector General for Afghanistan Reconstruction Staff (Dec. 3, 2016).

"The direction to engage with [Imperatis] was provided by the Irregular Warfare Support Program office within CTTSO."[52]



From: [redacted] Caution-mailto:[redacted]@newcentcorp.com < Caution-mailto:[redacted]@newcentcorp.com >]
Sent: Thursday, December 01, 2016 10:03 PM
To: [redacted] (Kabul)
Cc: [redacted]@newcentcorp.com < Caution-mailto:[redacted]@newcentcorp.com >]; [redacted]@newcentcorp.com < Caution-mailto:[redacted]@newcentcorp.com > [redacted]@mail.mil < Caution-mailto:[redacted]@mail.mil >]; [redacted]
Subject: Re: SIGAR Legacy Audit

Dear [redacted]

This period is before my time so [redacted] and [redacted] have kindly provided me the information you require:

1. When did you [first] present the Legacy Model and who did you present it to?

The concept was initially presented to personnel within TSWG (Technology Support Working Group), part of CTTSO, in mid-2006. We were subsequently notified in early 2007 that the Marine Corps Intelligence Activity (MCIA) was interested in the model. The first meeting with MCIA took place in February 2007. Ongoing engagement and work on refining the model continued thereafter.

2. When did CTTSO and the USMC direct you to Jorge Scientific and who directed you?

It is our understanding that various Prime contractors were considered to execute the original Legacy program in Anbar Province, Iraq. We were informed in late August 2007 of the possibility that a contract was to be placed with Jorge Scientific. Our first meeting with them to discuss the way ahead and the proposal material they would require from New Century was in mid-September 2007. The direction to engage with Jorge was provided by the Irregular Warfare Support Program office within CTTSO.

Regards,

[redacted]

[redacted]

Programme Manager

New Century

Building Intelligence Capacity

[52] Email from Programme Manager, New Century Consulting, to Office of the Special Inspector General for Afghanistan Reconstruction Staff (Dec. 1, 2016).

V. Lack of Effective Competition

CTTSO and the Army relied on an obscure contracting vehicle to award and continue the Legacy Program without effective competition.

A. DOD Used a Broad Agency Announcement "Research and Development" Contract Vehicle for the Legacy Program

In order for the Legacy Program to move forward, DOD needed a vehicle by which to award a contract. Such a tool was attained through a seemingly unrelated announcement by the Army in October 2006. The Army had publicly issued a BAA for Basic and Applied Scientific Research. A BAA is a procurement procedure used to seek proposals for basic and applied research when facing a development challenge that does not have a clear solution or shows an opportunity for innovation.[53] BAAs are designed for agencies to explore scientific study and experimentation for the purpose of advancing knowledge, rather than focusing on a specific system or hardware solutions.[54] Once proposals are submitted, the agency selects one (or more) for an award. An advantage of BAAs is that they allow the government to solicit creative ideas that may be missed if an agency prescribed a specific solution. However, a disadvantage of BAAs is that they can allow contractors to win awards that extend far beyond the original purpose of the research solicitation.

With regard to the Legacy Program, Defense officials stated that the purpose of the BAA was to defeat improvised explosive devices, which at the time were killing and wounding American service members in Iraq at alarming rates. The BAA sought research proposals from educational institutions, nonprofit organizations, and commercial organizations for research in "chemistry, electronics, environmental sciences, life sciences, materials science, mathematical and computer sciences, mechanical sciences, physics, computational and information sciences, sensors and electron devices, survivability/lethality analysis, and weapons and materials research."[55]

[53] Army Research Lab, Broad Agency Announcements Page (https://www.arl.army.mil/www/default.cfm?page=8) (accessed Feb. 15, 2018); United States Agency for International Development, Broad Agency Announcements Page (https://www.usaid.gov/partnership-opportunities/respond-solicitation/broad-agency-announcements) (accessed Feb. 15, 2018).

[54] FAR 35.016.

[55] Army Research Laboratory, Army Research Laboratory and the Army Research Office Broad Agency Announcement for Basic and Applied Scientific Research (W911NF-07-R-0001-03) (FY 2007 – FY 2011) (Oct. 16, 2006).

Description of Research called for under the BAA used to award the Legacy Contract:

Research proposals are sought from educational institutions, nonprofit organizations, and commercial organizations for research in chemistry, electronics, environmental sciences, life sciences, materials science, mathematical and computer sciences, mechanical sciences, physics, computational and information sciences, sensors and electron devices, survivability/lethality analysis, and weapons and materials research. Proposals shall be evaluated only if they are for scientific study and experimentation directed toward advancing the state of the art or increasing knowledge and understanding.

Source: Army Research Laboratory, Army Research Laboratory and the Army Research Office Broad Agency Announcement for Basic and Applied Scientific Research (W911NF-07-R-0001-03) (FY 2007 – FY 2011) (Oct. 16, 2006) (p. 5 of 147)

The list makes no mention of Iraq or Afghanistan, let alone providing training or mentoring programs in those countries. However, the BAA goes on to describe in greater detail research that is needed. On page 78, roughly halfway through the 147-page solicitation, under a section describing research proposals in "Mathematical Sciences" the BAA stated described a need for "Information Fusion in Complex Networks." It stated that this included not only information gathered through technology, using physics-based sensors, but also human intelligence.

Portion of BAA used to award the Legacy Contract:

especially in urban conflict, there are often not a lot of them in places where needed. Operations depend not only on information from physics-based sensors but also on signals intelligence (SIGINT—information from intercepted communications, radar, and other forms of electromagnetic transmissions), communications intelligence (COMINT—intercepted messages or voice information), open-source intelligence (OSINT—newspapers, radio and TV programs), human intelligence (HUMINT) and databases, which we will call "soft information". Extraction

Source: Army Research Laboratory, Army Research Laboratory and the Army Research Office Broad Agency Announcement for Basic and Applied Scientific Research (W911NF-07-R-0001-03) (FY 2007 – FY 2011) (Oct. 16, 2006) (p. 78 of 147)

Imperatis and NCC would go on to make hundreds of millions of dollars on the Legacy Program, a proposal that hinged on the term "HUMINT" appearing only once in an approximately 150-page BAA for basic and applied scientific research. While the BAA that was used for the Legacy Program has expired, earlier this month the Army posted another 122-page BAA calling for new research and development proposals through March 2022.[56]

2. BAAs Allow for Elimination of Competition, And DOD Continued to Award "Research and Development" Contracts Even After Legacy Program Matured

Once an agency collects responses to a BAA[57], it can select one or more proposals for a contract, without needing to conduct a standard contract competition. As a substitute, the Army conducts a "scientific review process" prior to selection.[58] However, given the wide variety of proposals that are possible under BAAs—and certainly under the nearly 150-page BAA—proposals are frequently unique. In a briefing to investigators, DOD officials acknowledged that BAAs allow for the possibility of unique proposals that eliminate competition. When a contractor submits a proposal with distinct solution, that contractor may be placed in its own, solo, category—void of competition.[59]

Minority Committee staff sought the proposals, or "white papers," that the Army received in response to the BAA in order to examine both how many proposals were received, which were selected, and whether any were similar to the Legacy Program proposal. However, the Army never produced them. Staff was therefore unable to identify whether there was an effective competitive bid to provide mentoring and training services to Iraqi intelligence services.

DOD also continued to use the BAA vehicle to award further "research and development" Legacy Program contracts long after the Legacy Program had been established and was no longer new. By design, the majority of research and development contracts are directed toward objectives for which the work or methods cannot be precisely described in advance.[60] Legacy Afghanistan, Kabul, South and East, however, were all granted as research and development contracts after the original Legacy Iraq contract ended in March 2010. By that point, DOD had three years of experience in running the Legacy Program. Every Legacy Program contract in Afghanistan was considered a "pilot program," even though the only difference between them was geographic location.[61] It is unclear why DOD continued to fund the program through the BAA research and development vehicle, given its flaws, once the program matured.

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[56] Army Research Laboratory, Army Research Laboratory and the Army Research Office Broad Agency Announcement for Basic and Applied Scientific Research (W911NF-17-S-0003) (01 April 2017 – 31 March 2022) (Apr. 1, 2017).

[57] FAR 36.016. BAAs are published annually (at minimum), typically through the public website, www.fbo.gov to induce competition at least at the beginning of the process.

[58] In this case, proposals were selected based on technicality, importance to agency programs, and fund availability. Army Research Laboratory and the Army Research Office Broad Agency Announcement for Basic and Applied Scientific Research (W911NF-07-R-0001-03) (FY 2007-2011).

[59] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Director of the Army Staff, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[60] FAR 35.002.

[61] Office of the Special Inspector General for Afghanistan Reconstruction, Briefing with Committee Staff (Mar. 6, 2018).

VI. Deficient Contract Management and Oversight

The Army served as the projects' contracting officer's representative (COR),[62] and was responsible for the oversight of Imperatis and NCC's performance.[63] CTTSO used "performance metrics for Legacy Program field work, collecting feedback from the Commands, and the respective Army-appointed military Technical Monitors on the ground; [CTTSO also] organized and managed numerous RAND Corp. third-party assessments; and conducted routine in-theater oversight visits," according to DOD.[64] Finally, the Army delegated administrative contracting officer responsibility to DCMA, which gave them the responsibility of reviewing and approving invoices. DCMA delegated DCAA as its authorized representative to assist with reviewing contractor and subcontractor invoices.[65] Despite (or perhaps because of) this delegation of responsibilities, there were deficiencies in the oversight of the Legacy Program and ASOM programs. This included both Imperatis's and NCC's performance under the contract, as well as financial controls.

1. The Legacy and ASOM Programs Failed to Establish Adequate Metrics Measuring the Program's Effectiveness

Performance oversight of the Legacy and ASOM Programs suffered because the contracts themselves lacked adequate performance metrics, and because the Army tolerated poor performance reporting. While each contract required regular reporting and planning, none of the contracts—Legacy Iraq, Legacy Afghanistan or ASOM—included quantitative performance metrics.[66] Without quantitative metrics, it is difficult to determine the success or value of the Legacy and ASOM Programs.

Minority staff sought all of the Army's monthly reports for the Legacy and ASOM Program contracts in order to examine the Army's oversight efforts, but the Army only provided a limited assortment of reports.[67] In the COR monthly reports provided to minority staff by SIGAR, the qualitative ratings suggested a lack of robust oversight. Mostly satisfactory ratings were awarded in each report[68] and the overwhelming majority of reports did not include comments to support the evaluation rankings.[69] The Army explained that evaluation similarities were due in

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[62] Special Inspector General for Afghanistan Reconstruction, Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics (July 27, 2017) (SIGAR 17-57-AR).

[63] FAR 1.604.

[64] Email from Office of Assistant Secretary of Defense for Legislative Affairs to Senate Committee on Homeland Security and Governmental Affairs Minority Staff (Apr. 24, 2018).

[65] Special Inspector General for Afghanistan Reconstruction, Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics (July 27, 2017) (SIGAR 17-57-AR).

[66] Special Inspector General for Afghanistan Reconstruction, Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics (July 27, 2017) (SIGAR 17-57-AR).

[67] The Army provided the Committee with a July 2013 compliance report for Legacy Afghanistan, a December 2012 and July 2011 in-theater report, a trip report from December 2012 and another ranging from October to November 2013, a June 2013 monthly status report, a December 2011 RAND evaluation, three Contractor Performance Assessment Reports, two of DCAA's audits of Imperatis, and an end of course report ranging from April to May 2013.

[68] Despite the Committee's request to DOD for all performance reviews conducted throughout Legacy and ASOM between 2007 and 2016, DOD only provided COR monthly reports between January 2013 and February 2014. The Committee was unable to obtain additional monthly reports.

[69] Department of the Army, ACC-Adelphi, *COR Monthly Report: Afghanistan* (W911QX-12-C-0011) (copy on file with Committee).

part to the operational design of the Contractor Performance Assessment Reporting System (CPARS).[70] The operational design, however, does not account for the lack of comments to support evaluation rankings or explain why the Army could produce only 13 months of oversight reports for a nine year program. The Army also provided excerpts of statements and letters written between 2009 and 2011 by Army senior leadership advocating for the increase in Legacy Program training and implementation, although again, none appeared to be based on any quantitative performance metrics.[71]

As part of its oversight responsibilities, CTTSO awarded two contracts to facilitate management responsibilities to Research and Development Corporation (RAND) and ManTech International Corporation (ManTech).[72] RAND was responsible for six-month incremental study evaluations summarizing work performed and offering recommendations for the next period.[73] RAND also completed a final evaluation and compiled lessons learned throughout the project duration. Between RAND, and Mantech, the two firms shared a number of potential oversight tasks, including visits to mentoring sites in Afghanistan, reviews of NCC reports, and interviews of contractor and subcontractor personnel.

DOD asserted that CTTSO collected significant, positive performance information on the Legacy and ASOM Programs.[74] Minority staff sought to evaluate any oversight products that CTTSO or its contractors produced. In response, CTTSO provided RAND studies evaluating the Legacy Program between January 2010 and September 2012, as well as two trip reports completed by a ManTech Subject Matter Expert (SME).[75] While overall characterizations of the Legacy and ASOM Programs were positive, these documents provided limited perspective of programs that spanned from 2007 to 2016. A December 2012 trip report, one of two provided by CTTSO, noted several deficiencies. Notably, the report questioned the ability of the Legacy Program to transition to a sustainable and long lasting HUMINT program in Afghanistan. The report noted high leader and mentor turnover which caused disruptions to program progress. At some sites, despite years of mentoring, Afghan mentees had only completed a few months of training. Some key leaders questioned the Legacy Program's effectiveness in Afghanistan due to possible lack of commitment by the host nation. The report's overall conclusion was that lack of commitment from the host nation may prove to be the overreaching factor for success of the

[70] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Director of the Army Staff, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017). The system is known as the Contractor Performance Assessment Reporting System (CPARS).

[71] Department of the Army, CTTSO, Senior Leader and Congressional Authorization Quotes on Program Effectiveness (copy on file with Committee).

[72] Special Inspector General for Afghanistan Reconstruction, Afghanistan National Defense and Security Forces: DOD Spent $457.7 Million on Intelligence Capacity-Building Programs, but Impact Cannot Be Fully Assessed Because of a Lack of Performance Metrics (July 27, 2017) (SIGAR 17-57-AR).

[73] Department of the Army, U.S. Army Security Assistance Command, Statement of Work Project Legacy: Professionalization Program Intelligence Management Continuation (copy on file with Committee).

[74] DOD stated that the success of the Legacy Programs was validated through senior officer requests for expansion, annual funding continuation, and praise from the House Committee on Armed Services. Email from Office of Assistant Secretary of Defense for Legislative Affairs to Senate Committee on Homeland Security and Governmental Affairs Minority Staff (Apr. 24, 2018).

[75] Department of the Army, Combating Terrorism Technical Support Office, Dec. 2012 Legacy Trip Report (copy on file with Committee); Department of the Army, Combating Terrorism Technical Support Office, Oct. 23-Nov. 21, 2013 Legacy Trip Report (copy on file with Committee); Department of the Army, Combating Terrorism Technical Support Office, Pre-ASOM RAND Studies (copy on file with Committee).

Legacy Program and that host nation commitment should be reviewed before investing a similar program for any designated country.[76]

2. Delayed Audits of the Legacy Program and Bankruptcy of Contractor Raise Risk that Government Will Never Fully Recover $51 Million in Questioned Costs

Under the Legacy Program contracts, like other companies, Imperatis submitted its invoices to DCAA at regular intervals—typically monthly—and DCAA would make an initial review for questionable costs. Once DCAA approved the invoice, it sent them to DCMA to pay the contractors as required by the contracts.[77] DCAA was allowed five days to review the invoices, which were not detailed enough to identify unallowable costs in that time. If DCAA had identified a "red flag," or questionable cost, DCMA would then perform an audit of that specific invoice to determine if the costs should be questioned. Under the Legacy Program contracts, no questionable costs were identified during the invoicing period.[78]

However, as with other contracts, DCAA conducted a second, more thorough review. After completion of the contract, DCAA performed an audit, examining the contractor's and subcontractor's books and records to confirm that the original costs paid were appropriate. Any questionable costs could be referred to DCMA. DCMA could then negotiate with the contractor for reimbursement, or pursue a civil action against the contractor. It was this second DCAA review which identified $51 million in questionable costs by NCC.[79]

According to the Army, DCAA's ultimate identification of NCC's outrageous spending indicated that there was adequate financial oversight of the Legacy Program contracts. The Army denied any officials should be held accountable for NCC's spending, because the Army had identified the spending and was taking action to recoup the money. ACC explained that future contract provisions could allow for additional scrutiny of invoices prior to payment, such as by requiring additional cost detail or by delaying payment to allow DCAA more time for examination. However, such provisions would likely reduce the number of interested bidders and would result in increased costs.[80]

Reliance on a post-performance audit for financial oversight is not foolproof, as the Legacy Program itself demonstrates. Such audits need to be timely, but DCAA's audit of costs between 2008 and 2013 was not completed until 2016—nearly three years after that period

[76] Irregular Warfare Support Program, In Country Review: Legacy, Insider Threat—Situational Awareness Training and Intelligence—Mobile Education and Training Team Trip Report (Dec. 12, 2012).

[77] The process was described to Committee staff at a briefing by representative from multiple agencies responsible for the different aspects of contract awarding and oversight; Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Deputy Assistant Secretary of the Army for Procurement, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[78] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Deputy Assistant Secretary of the Army for Procurement, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[79] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Deputy Assistant Secretary of the Army for Procurement, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[80] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Deputy Assistant Secretary of the Army for Procurement, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

ended and almost eight years after the first costs were incurred. Although the Legacy Program ended two years ago, DCAA's audit of the remainder of the program will not be completed until later this year.[81] This delay is not unusual. For many years, DCAA has had a severe backlog of audits.[82] This backlog has been a source of concern for Ranking Member McCaskill. A report last fall by the Government Accountability Office (GAO), prepared in part at her request, found that despite improvements in reducing the backlog, DCAA would be challenged in eliminating audits more than two years old by the end of 2018.[83] In response to a request from Ranking Member McCaskill last October, DCAA stated that the average age of DOD incurred cost audits is 14.3 months.[84]

Additionally, a post-performance audit, by definition, requires that the government recoup money after it has already paid it to the contractor. But, as in the case of the Legacy Program, if the contractor has gone out of business, the government may be at a loss (Although DCAA questioned the costs of NCC, the government can only recover money from the prime contractor, rather than the subcontractor). Because Imperatis ceased business operations in 2016, the government has been forced to submit its claim for reimbursement with the company's bankruptcy trustee. Unfortunately, Imperatis's assets amount to only $900,000. Even if the Army becomes the highest priority creditor, it is unlikely that it would ever recoup the full $51 million that DCAA questioned.[85]

VII. NCC is Under Criminal Investigation But Continues to Profit from Federal Contracts

As discussed, the Army is legally handicapped in recovering the $51 million in questioned NCC costs because the prime Legacy Program contractor is insolvent. However, DCMA is attempting to negotiate a voluntary settlement directly with NCC. DCMA could not say how much, if anything, the Army has successfully recovered at this point in its negotiations.[86]

There have also been criminal investigations related to the Legacy Program. According to DCAA, Imperatis was the subject of a joint Defense Criminal Investigative Service (DCIS) and

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[81] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Deputy Assistant Secretary of the Army for Procurement, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[82] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Deputy Assistant Secretary of the Army for Procurement, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[83] Government Accountability Office, Federal Contracting: Additional Management Attention and Action Needed to Close Contracts and Reduce Audit Backlog (GAO-17-738) (Sept. 2017).

[84] Letter from Anita F. Bales, Director, Defense Contract Audit Agency, to Senator Claire McCaskill (Nov. 13, 2017).

[85] The Defense Finance and Accounting Services (DFAS) submitted a claim with the bankruptcy trustee for $23.1 million. It is unclear why DFAS submitted a claim for $27.9 million less than the DCAA Audit questioned. DCAA stated that this claim "represents the outstanding NCC overbillings and other DCAA questioned amounts from Imperatis incurred cost audits including penalties and interest." It is unclear whether the reason this claim is $27.9 million less than the DCAA audit is because NCC or Imperatis had already reimbursed the government for questioned costs or whether further work had led DCAA to reduce the amount of costs it had questioned. Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Deputy Assistant Secretary of the Army for Procurement, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[86] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Deputy Assistant Secretary of the Army for Procurement, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

U.S. Army CID investigation that began in October 2014. However, DCIS and CID closed the Imperatis case in January 2017, with no apparent action.[87] On the other hand, a CID investigation of NCC is currently underway.[88]

Despite the findings of the DCAA and SIGAR audits, the attempts by DCMA to recover questioned costs, and an ongoing criminal investigation, NCC apparently continues to profit from government contracts. In April 2016, NCC entered into a subcontract with a prime DOD contractor, Raytheon, that continues to this day.[89] In December 2014, the Army awarded NCC another research and development contract with a ceiling value of more than $83 million that continued through September 2017.[90] At a Senate Committee on Armed Services hearing on April 12, 2018, Senator McCaskill asked Secretary of the Army Dr. Mark Esper for a full list of contracts on which NCC is a contractor or subcontractor.[91]

Although suspension and debarment is one of the most powerful tools that government has to hold contractors accountable, in this case the Army has not yet chosen to wield it. Even though there is no legal requirement to wait, and even though the standard for suspension and debarment is far lower than for criminal liability, the Army stated that it would delay a suspension and debarment decision until after CID completes its investigation of NCC.[92] Given that the CID investigation of Imperatis took over two years, it may be a profitable wait for NCC.[93]

VIII. Conclusion

Ranking Member McCaskill's investigation into the Legacy and ASOM Programs uncovered several deficiencies in the Army's contract award processes. The Army granted the Legacy and ASOM Programs under a "research and development" contract vehicle, which allowed Imperatis to win the Legacy Program contracts without effective competition. The programs lacked effective performance metrics and were considered pilot programs even after they matured. Additionally, the Army allowed Imperatis, its prime contractor, to subcontract an estimated 80% of the work to NCC. The pass-through contracting between Imperatis and NCC would have been severely restricted had laws sponsored by Ranking Member McCaskill been in place at the time of the award. This legislation requires that alternative vehicles be considered if

[87] Defense Contract Audit Agency, DCAA Oversight of Imperatis (formerly Jorge Scientific Corporation) June 2017 Update (copy on file with Committee).

[88] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Director of the Army Staff, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[89] Email Office of Assistant Secretary of Defense for Legislative Affairs to Senate Committee on Homeland Security and Governmental Affairs Minority Staff (Apr. 24, 2018); Defense Contract Audit Agency, DCAA Oversight of Imperatis (formerly Jorge Scientific Corporation) June 2017 Update (copy on file with Committee).

[90] Federal Procurement Data System (https://www.fpds.gov/DataCollection/contracts/jsp/1_4/idvController.jsp?agencyID=9700&PIID=W911QX15D0002&modNumber=0&actionSource=searchScreen&actionCode=&status=F&documentVersion=1_4) (accessed Apr. 13, 2017); Email Office of the Chief, Legislative Liaison, Department of the Army to Senate Committee on Homeland Security and Governmental Affairs Minority Staff (April 25, 2018). The contract number for the December 2014 NCC contract is W911QX-15-D-0002.

[91] Senate Committee on Armed Services, *Hearing on Posture of the Department of the Army* (Apr. 12, 2018).

[92] Combating Terrorism Technical Support Office, Army Contracting Command-Aberdeen Proving Ground, Defense Contract Management Agency, Defense Contract Audit Agency, and Office of the Deputy Assistant Secretary of the Army for Procurement, Briefing with Senate Committee on Homeland Security and Governmental Affairs Staff (Oct. 4, 2017).

[93] Defense Contract Audit Agency, DCAA Oversight of Imperatis (formerly Jorge Scientific Corporation) June 2017 Update (copy on file with Committee).

an offeror on a DOD contract informs the agency that it intends to award subcontracts for more than 70% of the total costs.[94]

Minority staff also found that financial and performance oversight of the Legacy and ASOM programs was deficient. While DCAA's audit examined costs incurred between 2008 and 2013, those costs incurred after 2013 have yet to be assessed. With DCAA's audit inventory backlog average of 14 months, additional recovery of wasteful spending by Army contractors and subcontractors will be delayed—and even uncertain, given the insolvency of Imperatis.

Despite its history of egregious waste and an ongoing CID investigation, DOD continues to conduct business with NCC. NCC is currently a subcontractor on another DOD contract.

[94] National Defense Authorization Act for Fiscal Year 2013, Pub. L. 112-239, Sec. 802(1) (2013).